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THE RELATION OF RODENT PLAGUE TO HUMAN INFECTION *

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The most essential factor in the control of plague during recent years has been the realization that it is essentially a rodent epizootic. It is true that the literature of plague contains reports of the disease in monkeys, dogs, cats, horses, asses, cattle, sheep, goats, swine, calves, chickens, pigeons, geese, camels, kangaroos, bats, frogs, geckoes, goldfish and carp, but many of these reports are not confirmed by convincing experimental evidence.

Hankin[1] noted an epizootic in monkeys in October, 1897, at Kankhal, and a second simian epizootic was observed at a little later date at Jawallapur. A third series of cases was observed at Gadar in the residency of Bombay in December, 1899. In the second and third simian epizootics the diagnosis was confirmed bacteriologically. Calmette and Salimbeni[2] and the German and Russian plague commissions demonstrated the susceptibility of the brown monkey and the gray monkey to plague. From the collected evidence it may be deduced that while monkeys have a great susceptibility to plague infection, they do not seem to play an important rôle in its propagation under natural conditions.

While there are a number of reports on the susceptibility of the dog to plague infection, a study of them does not warrant the belief that the dog is liable to the disease.

There are a large number of reports on epizootic plague among cats, yet these animals probably play a very unimportant part in the continuance and spread of the disease. Hunter[3] concludes that cats are susceptible to plague and that they suffer from an acute or chronic plague septicemia. He was of the opinion that they infected themselves by eating infected rats.

Horses are moderately susceptible to plague infection when pure cultures are injected into their blood streams in relatively large doses. A careful review of the literature does not disclose an instance in which they suffered from the disease in nature.

Schreyer,[4] K. Matsuo,[5] and Wu Lieu Teh[6] have reported that coolies working in a coal mine and attacked by pneumonic plague infected donkeys with the disease. These are very extraordinary conditions and may be accounted as practically negligible in the course of an ordinary epidemic.

Under natural conditions plague has never been found in bovines. It is true that Simson[7] reported ingestion plague among calves, chickens, pigeons, dogs, geese, sheep and swine, but Bannerman and Kapadia,[8] the German commission,[9] and Hafkin and Lowson[10] have reversed his reports. It is, therefore, logical to conclude that these animals do not play a rôle in plague perpetuation or dissemination.

Since 1899, when Dchurkowski[11] described an infectious disease of camels closely resembling plague, there have been several reports of alleged outbreaks of plague in which the camel was the vehicle. The Astrakan commission decided that the camel was susceptible to plague and suggested that these animals might have been the means by which plague has been introduced into countries along the caravan routes. It is doubtful, however, if camels play any great part in the large problem of plague.

The report of the Board of Health of Sydney, 1902, contains a note by Thompson in which he states that in the epidemic of that year seven kangaroos died from plague in the zoological garden at Sydney. This is an isolated instance and without bearing on the general problem.

With regard to bats, the reports are at variance. Gosio,[12] experimenting with the *Vesperugo noctula*, believed that he was able to infect them. On the contrary, Toyama[13] reported these animals as insusceptible.

It seems to be fairly clearly demonstrated that birds in general, and particularly birds which run on the ground, are not susceptible to plague.

The cold-blooded vertebrates, that is, reptiles and batrachians, have been experimented with by Nuttal,[14] Dweill,[15] Furth,[16] and Fukahara,[17] and do not seem

* Read before the Section on Preventive Medicine and Public Health at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

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2. Calmette and Salimbeni: Plague at Oporto, Ann. d. l'Inst. Pasteur, 1899, xiii, 865.
3. Hunter, W.: Plague in Cats, Lancet, London, April 22, 1905, p. 1064.
4. Schreyer, O.: Oester-Sanitatswesen, 1911, No. 19.
5. K. Matsuo: The Simultaneous Appearance of Plague in Man and the Ass on the Same Farm, Centralbl. f. Bakteriol., Orig., 1912, lxv, 417.
6. Wu Lieu Teh: International Plague Conference of Mukden, Lancet, London, May 20, 1911.
7. Simson, W. J.: Plague at Hongkong, Brit. Med. Jour., March 28, 1903.
8. Bannerman and Kapadia: The Receptivity of Domestic Animals to Plague, Jour. Hyg., 1908, No. 2.
9. Report of the German Commission on Plague in India, 1899. Arb. a. d. k. Gsndhtsamte, xvi.
10. Lowson: Trans. Soc. Epidem., N. S., 1897, xvii, 57.
11. Dchurkowski: Arch. d. Veterinarwissensch., April, 1899.
12. Gosio, B.: The Transmissibility of Plague to Bats, Arch. Ital. Biol., 1903, xxxix, No. 1; Bull. d. l'Inst. Pasteur, 1903, p. 784.
13. Toyama: Experimental Studies on Plague, Ztschr. f. med. Mikros., 1909.
14. Nuttal: Centralbl. f. Bakteriol., 1897, xxii, 87.
15. Dweil: Centralbl. f. Bakteriol., 1897, xxii, 382.
16. Furth: Ztschr. f. Hyg. u. Infektionskr., 1907, No. 2, p. 315.
17. Fukahara: Arch. f. Hyg., 1907, lxiii, Part 2.

susceptible to plague, either by injection or ingestion.

Mention need not be made of the rôle of insects and *Ixodidae* in relation to plague, their part being the transmission of the infection from host to host rather than the function of keeping the disease alive within their own bodies.

The rôle of the rat in the pathogenesis of plague is classical and there is a preponderance of evidence which proves that bubonic plague in man depends entirely on the presence of the disease in rodents. It is true that in the pneumonic form of the disease infection occurs directly from man to man without the intermediation of any ectoparasite, but the great bulk of plague is not pneumonic, but bubonic, and it is the rodent species which keeps the disease alive and which carries it from country to country and into the home of man. Plague has been found in nature in the *Mus norvegicus*, the *Mus rattus*, the *Mus alexandrinus*, and the *Mus musculus*. The *Nesocia bandicota*, or bandicot rat; the *Arctomys bobac*, or tarbagan; the *Putorius furo*, or ferret; the *Herpestes griseus*, or mongoose, and the *Neotoma fuscipes*, or brush rat, have all been found susceptible to the disease. All of the spermophiles have proved infectible, as have also the *Cynomys ludoviciana*, or prairie dog, and the *Putorius foetidus*, or skunk. The *Citellus grammurus*, or rock squirrel, and the *Citellus beecheyi*, or ground squirrel, have also proved infectible. The disease has been found in nature in brush rats, skunks and ground squirrels. The overwhelming fact in plague perpetuation and spread is that it is a rodent disease.

It is interesting to study the distribution of human plague cases in their relation to rodent plague cases. It is, of course, impossible to discover every case of rodent plague and on account of the migratory habits of rats it does not necessarily follow that the infection exists in large amounts at every place in which plague rats are taken. On the other hand, the impossibility of determining accurately the movements of human beings renders it difficult at times to discover the exact place at which infection was received. Not infrequently, however, plague rats are found in or near the building in which the human plague victim worked or lived, and the reverse is even more true, that human plague does not occur among people who work and live in rodent-free surroundings. Of the thirty cases of human plague which occurred in New Orleans in 1914, only five were unconnected with rodent plague foci, and in many of them the place at which the infection was received was accurately determined.

The foregoing is the basis of the measures for plague prevention and eradication. Since plague is a rodent disease, if man is isolated from rodents he will not under ordinary circumstances contract the disease, the key to prevention being the separation of man from rats.

It is manifestly impossible to kill all of the rats in a given community, much less in a whole country, or the entire world. If their migrations can be controlled, if they can be excluded from the places in which man lives and works, the maximum result has been accomplished. Wide migration of rats occurs largely by ships, a relatively very small number traveling overland by trains. The frequent periodic fumigation of ships, the breasting-off and rat-guarding of nonfumigated vessels, and the inspection of outgoing and incoming cargoes will, to a considerable degree, control wide rodent migration. The ratproofing of buildings used by man for any purpose whatsoever will keep rodents out of intimate association with man. For this purpose impervious material, such as concrete, brick, stone, and tile, have their architectural application. During the presence of a plague epizootic the extermination of rats by traps, poisons, and separation from food supply so diminishes the density of the rodent population as to limit the spread of the disease from the sick to the well, and thus the disease automatically dies out for want of infectible material. This in effect is the dilution of the infectible material. At the same time the laboratory examination of captured rodents affords an accurate guide as to the centers of rodent infection and permits the application of intensive preventive methods so that the disease may be stamped out among rats before opportunity has occurred for it to be transmitted to man.

In the presence of an epidemic, every measure which will protect man should be taken. Among these is immunization against the disease after the method of Haffkine. This is of doubtful applicability in American cities. It could never be made mandatory, and those persons who volunteer for such inoculations do not form the class which is most liable to receive the infection. This method has not proved useful in large eradicative measures, it having been found more practicable to limit the operations to rodent extermination and the exclusion of this species from the home of man.

ABSTRACT OF DISCUSSION

Dr. William C. Hassler, San Francisco: The paper gives us a very clear insight into the animals which are carriers of this disease. The point that I was particularly interested in was the matter of prophylaxis. I was the first one to receive a dose of Haffkine serum here in 1900. I was then acting chief sanitary inspector of the health department. We tried to impress its harmlessness on the Chinese population here whom we then had in quarantine. It was all right as long as they saw us getting the dose, but a few days later when we came to demonstrate the harmlessness of it, and our arms were swollen about the bigness of a goose egg, we had great difficulty in inducing them to submit to the measure. It would not work and we had to adopt other measures. Nevertheless, it is a safeguard, and one which can be used and has its value under certain conditions.

Dr. W. C. Rucker, Washington, D. C.: It may be of interest to this section to learn a little bit about the results of the campaign against plague in New Orleans. New Orleans is today 75 per cent. rat-proof. The probabilities are that there will be 15 per cent. of the city which cannot be rat-proof for several years. There therefore remains only 10 per cent. to be done. This is being accomplished. Up to the present we have captured in the traps alone over 375,000 rodents. They are being taken at the rate of about 1,100 per day. Of these, 247 have been found infected, the last one having occurred on June 11. We are now getting plague rats at the rate of one out of over 21,000. They uniformly come from buildings and premises which are not rat-proof. There were thirty human cases, of which nine patients died. The probabilities are that had it been possible to give all of those patients the serum treatment very early and in large doses, the mortality would have been very much lower. The epidemic began in the early part of June, and the last human case occurred Oct. 4, 1914. An extensive out-going quarantine was established in order that the port might be kept open. Vessels were fumigated with either sulphur or carbon monoxid or hydrocyanic gas in order that they might leave freely. Every package of freight was inspected before it was put on the ship. Every freight car that left the city was inspected to determine its rat-proof and free condition; all freight was inspected before being loaded, and was then loaded under the eye of an inspector.

The car was then sealed with a lead seal bearing some device, and there was a large sign posted on the side of the car, "This car certified as to its rat-proof and free condition providing the seal remains unbroken." As a result, freight, both by maritime and overland routes, moved freely and continuously to and from the city of New Orleans. In this work we rat-proofed some 30,000 cars alone; and in the fumigation of ships we consumed for the carbon monoxid fumigation about a million and a half pounds of coke. There was established early an inspection of the dead in order that all cases might be found, and this inspection continued until it was very clearly demonstrated that no more human plague existed. All of the rats were identified as to sex and species; and in this connection I desire to point out a very interesting gage on the value of your work. If you are carrying on a rodent extermination campaign, it is interesting to have a check by means of which you may know whether you are really killing rats. The trapping of mice in a campaign is entirely incidental. You do not aim to catch mice; and in the beginning of the campaign it will be found that the number of the true rats will be very high, something like 91 per cent. of the entire catch. If you will plot those on a chart you will find, if your work is successful, that there is a steady fall in the number of true rats, and that there is a steady rise in the number of mice, until you come to a point, as we did away along last December, where the mouse line has passed and far exceeds the rat line. In other words, you have been killing off, if your work is successful, the natural enemies of the mouse, and the mouse is therefore able to come out and get into your traps. We have in our exhibit at the exposition a very good chart showing this very simple point.

My paper, I feel, has been trite, but I think that it is a wise thing to tell the story over and over again, that so long as you have rats you are liable to have rodent infection, and that so long as you have rodent infection you are liable to have human infection and plague.

URINARY ANTISEPSIS

A CLINICAL AND BACTERIOLOGIC STUDY *

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SAN FRANCISCO

Urinary infection is the most frequent of genito-urinary disturbances. Sometimes it is the primary and principal disease, but more often it occurs as an added and secondary burden, and whatever the abnormality it is always an imminent possibility. The significance of the condition is given unusual emphasis by a recent analysis of the postmortem records of the Johns Hopkins Hospital (1912-1914). These records show that the cause of death, in more than half of the fatalities in the urologic service, was an infection which, as indicated clinically in the histories and pathologically by finding cystitis, pyelonephritis or pyelitis, probably spread in every instance from the urinary tract. These and other facts emphasize the great danger of urinary infection, and the necessity for the development of a more efficient therapeusis. The object of this paper is to present a study of the limitations of the known urinary antiseptics, to correlate these facts with clinical conditions and to advocate a selective method of treatment. No specific treatment or method of treatment is known. An intelligent correlation, in each individual case, of antiseptic, bacteriologic and clinical facts offers a scientific and rational method of attack.

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* On account of lack of space this paper has been abbreviated for THE JOURNAL. It will appear in full in the Transactions of the Section and in the author's reprints.

CLINICAL CONSIDERATIONS

From a clinical standpoint each case of urinary infection should be studied with regard to three causative factors: (1) the infecting agent; (2) the source and portal of entry of this infection and its character and degree of extension, and (3) the abnormal conditions of the genito-urinary tract which may be accessory to the prolongation or spread of the infection.

Bacteriology: A long list of organisms has been reported for urinary infections, but it is full of duplications under different names. Relatively few organisms are common invaders, and the relative frequency of their occurrence in different parts of the tract is fairly uniform (urethritis excluded). The colon bacillus is found in from 70 to 80 per cent. of renal infections. *Staphylococcus pyogenes albus* (rarely the *aureus* and *citreus*) is the next most common invader, being present in about 10 per cent. of the cases. Then come the *Streptococcus pyogenes* and the *Proteus vulgaris* in about equal frequency, followed by scattered reports of the gonococcus and typhoid bacillus. Other organisms appear in reports for a few cases only, and some of these are questionable. The findings for the bladder are not so uniform and a much greater variety of organisms has been reported. The colon bacillus occurs more often than all other organisms together, being isolated in from 50 to 60 per cent. of vesical infections. Excluding it and tubercle bacilli, the staphylococcus more than equals in frequency the occurrence of all other forms, of which the streptococcus and *Proteus vulgaris* occur most and about equally often. Then follow in relatively few cases the gonococcus, pneumococcus, *Micrococcus catarrhalis* and bacilli of the *faecalis alcaligines, enteritidis, pyocyaneus, typhosus* and still rarer aerobic and anaerobic forms. The relative frequency of occurrence of the tubercle bacillus is a matter of dispute but, probably, it is present in about 5 per cent. of all cases. These facts indicate that five organisms cover over 90 per cent. of urinary infections. These five are *Bacillus coli communis*, the staphylococcus, the streptococcus, *Proteus vulgaris* and the tubercle bacillus.

The Source and Extent of the Infection: The determination of the portal of entry of many infections is more a matter of conjecture than certainty; nevertheless, knowing the infecting agent and the extent of its activity, a very close deduction as to its source can be made. The great preponderance of colon infections emphasizes the importance of intestinal conditions. A colon cystitis of urethral origin is common in women, but in men who have retention or other local conditions which reduce the bladder resistance, a lymphatic borne cystitis is more common. In the absence of pronounced accessory factors or instrumental causes the urethral route is rarely followed by either colon bacilli or streptococci. *Proteus vulgaris* infections, however, are ascending in practically every instance and are prone to attack the bladder in old prostatics. Hematogenous infections of the kidney due to streptococci often follow scarlet fever, tonsillitis, furunculosis, etc. Staphylococci, being saprophytic inhabitants of the healthy urethra in 50 per cent. of men, have a common urethral entry. In view of the work of Rosenow and Warden relative, respectively, to streptococci and staphylococci, postgonorrheal prostatitis and seminal vesiculitis stand out as fertile sources of urinary infection from these organisms.

Accessory Factors to an Infection: The abnormal conditions of the urinary tract which may incite or

extend infection are well known. The difficulty comes in their recognition. Their correction causes the majority of infections to quickly subside. Obstruction in any part of the tract to a free urinary outflow is one of the most important of these accessory conditions. Other common abnormalties are the presence of foreign bodies, such as stone or tumor, and of diverticula. Injury to any part of the tract is frequently an inciting cause—injury from exposure, from the use of irritating drugs or following instrumentation, and possibly, in some cases, a reduction of resistance occurring with the continued presence of an alkaline reaction of the urine, either metabolic or from urea decomposition.

It often happens that an elimination of the source of infection and a correction of certain of the above abnormal conditions of the tract which are accessory to it will effect a cure of urinary infection without the use of antiseptics. Nevertheless, everyone has experienced clinical inability in these cases and it is needless to enumerate the many conditions in which antiseptics would be of value in addition to their great field of usefulness in prophylaxis. The above brief outline of clinical facts, however, emphasizes the great importance of never relying on antiseptics alone in the treatment of urinary infection.

TABLE 1.—GERMICIDAL POWER OF DISINFECTANTS

| | Per Cent. | | |

which causes absence of growth in it forty-eight hours after inoculation, at 37 C. (98.6 F.), the inoculation of the broth dilutions being done with 5 drops of fresh twenty-four hour bouillon cultures of the organisms.

The personal findings were: 1, *Bacillus coli communis;* 2, *Streptococcus pyogenes albus;* 3, *Staphylococcus pyogenes albus;* 4, *Bacillus typhosus* (Hopkins).

Table 3, the stability of disinfectants, indicates the highest dilution of the disinfectant (in water, broth and serum) which inhibits the growth of the organism (*B. typhosus*) for forty-eight hours after inoculation at 37 C.

The pentrating power, after Harris' collodion sac method, and the toxicity of disinfectants were studied. The results regarding the previously mentioned four general properties of disinfectant action may be briefly summarized.

Table 4, the penetrating power of disinfectants, indicates the power of osmosis through thin collodion sacs (Harris' method). These sacs, containing fresh twenty-four hour bouillon cultures of *B. typhosus,* were immersed in broth dilution of the disinfectant and subcultures were made from these sacs to broth tubes every ten, twenty and thirty minutes and at the end of twenty-four hours.

TABLE 2.—THE BACTERIOSTATIC POWER OF DISINFECTANTS

	Percentage Dilution of Substance in Broth
	1:10 · 20 · 30 · 40 · 50 · 60 · 70 · 80 · 90 · 100 · 200 · 300 · 400 · 500 · 600 · 700 · 800 · 900 · 1,000 · 2,000 · 4,000 · 6,000 · 8,000 · 10,000 · 20,000 · 30,000 · 40,000 · 50,000 · 60,000 · 70,000 · 80,000
Mercuric chlorid	....

is influenced by both metabolic and bacterial changes. In the absence of bacteria the reaction is usually acid, and even when neutral or alkaline from either disease or diet, regulation of the latter and feeding acid-producing drugs, such as acid sodium phosphate or sodium benzoate, will quickly render it acid. When bacteria which break down urea into ammonia and thus produce an alkaline urine are present, regulation of the diet and the feeding of acid-producing drugs usually fail to make the urine acid. Under such conditions hexamethylenamin is useless. The *Bacillus proteus vulgaris* readily decomposes urea so that in most urinary infections from it the urine is strongly alkaline. Both staphylococci and streptococci are prone to decompose urea and the typhoid bacillus may sometimes break it up. *Micrococci ureae* are very active alkalinizers. But colon and paratyphoid bacilli probably never cause decomposition. In the presence of certain infections it is, therefore, not always possible to secure an acid urine.

The simple chemical change from hexamethylenamin into formaldehyd is slow and gradual and it is seen that, even with a uniform excretion, the longer the drug is allowed to accumulate in the bladder the greater becomes its concentration and the more complete its conversion. This necessary time factor completely nullifies the value of the drug as an internal urinary antiseptic in many urinary conditions. Polyuria and frequent urination prevent this accumulation, and the constant outflow from the kidney, except in hydronephrotic cases, accounts for the fact that the drug is of little, if any, value as an antiseptic at the level of the kidney. The same reason explains the poor results in cases with retention catheter and in all cases with urinary fistulas. In postoperative prostatics, who particularly need an efficient urinary antiseptic hexamethylenamin is practically valueless until continence returns.

The value of hexamethylenamin is greatest as a bladder prophylactic before and following instrumentation, when the above mentioned urinary conditions are not present, and, inasmuch as formaldehyd is about equally bacteriostatic toward all organisms, the usefulness of the drug in this group of cases will probably never be supplanted.

Limitations of Other Internal Antiseptics: With the exception of some of the dyestuffs all other substances that have been used for internal urinary antisepsis may be very briefly disposed of. A glance at Table 1 will quickly indicate what might be expected from boric, salicylic and benzoic acids. Salol, because of its conversion into carbolic acid in the urine, has been advocated, but carbolic acid is a very weak bacteriostatic and, clinically, the results of the use of the drug support its bacteriologic worthlessness. The alkalies are equally inefficient. It has been repeatedly shown that colon bacilli will grow readily in alkaline mediums, and the use of alkalies in the treatment of colon infections is justified for symptomatic and palliative reasons and not for their antiseptic value. The iodids, because of their ready excretion by the kidneys and the high disinfectant power of iodin, have been proposed, but the occurrence of iodism and the lack of antiseptic power of the salts of iodin (potassium iodid, etc.), make of these substances a failure. Oil of sandalwood is a very weak antiseptic and has other objections. It may be said, therefore, that the only efficient internal urinary antiseptics are hexamethylenamin and certain of the anilin dyes.

The Value and Possibilities of Certain Dyestuffs: The development of knowledge concerning the selective action of certain anilin dyes (first pointed out by Rozsahegyi in 1887) has followed three general lines: that relating to vital staining, that relating to bacterial differentiation by means of special stains or medium impregnation (Drijalski, Conradi, etc.), and that

TABLE 3.—THE STABILITY OF DISINFECTANTS*

| | | Percentage Dilution of Substance | | |

relating to antisepsis. The antiseptic action of certain dyes is remarkably pronounced, and this selective and specific property portends their great future importance as urinary antiseptics. Kriegler, in 1911, made note of the proportion between the basic nature and the germicidal power of dyes, and Browning and Gilman, in studying the selective action of dyes for different bacteria and the relationship of chemical structure to this action, found that the substitution of alkyl groups in the amido side-chains of the unsubstituted triphenylmethane compound, pararosanilin, which has weak bacteriostatic action, lead to the most powerful bacteriostatic substance known for staphylococci, completely inhibiting their growth in a dilution of 1:5,000,000. This same dye, hexa-ethyl violet, must be in a strength of 1:20,000, however, to inhibit the growth of the *Bacillus coli communis*. The substitution of the ethyl group (C_2H_5) for the amino radicals in the unsubstituted diaminotriphenylmethane compound produces likewise an increase in bacteriostatic power. One such product, "brilliant green," is almost as strongly inhibitory for staphylococci and at the same time much more actively antiseptic toward the colon bacillus than hexa-ethyl violet. These same investigators made the interesting observation that serum modifies the antiseptic action of some dyes, as for instance, diminishing the action of hexa-ethyl violet slightly, of brilliant green considerably, but increasing that of diaminoacridin toward *B. coli*, and typhoid, staphylococci and anthrax. Recently Simon and Wood have shown that the antiseptic action of dyes is dependent, not at all on color, but on the presence of certain chemical groups which have basic properties, as, for example, the amino group (NH_2). It so happens that most basic dyes have right spectral colors, and most acid dyes, left spectral colors. By taking basic left spectral dyes (fuchsin, phenosafranin, tolusafranin, azin red, etc.) and acid right spectral dyes (indulin R., acid violet, urania blue, etc.) it may be shown that an acid dye, irrespective of color, is not bacteriostatic while basic dyes, likewise irrespective of color, may be bacteriostatic. It does not follow that all basic dyes have this effect. The replacement of the amino group by an acid radical—hydroxyl (OH) or carboxyl (COOH)—in an active basic dye leads to an almost complete loss of inhibitory effect. Of interest in this connection is the conclusion of Evans and Shulemann that the reaction of acid dyes in the body, when used as vital stains, is dependent on certain conditions of solution. They were able, for instance, to render a negative vital stain beautifully positive by changing its condition of solution (*Lösungszustandes*) thus disproving for acid dyes Ehrlich's side-chain theory. This may also explain the nonspecific nature of acid dyes toward bacteria.

The selective action of some of the common dyes has been more carefully studied. Churchman has shown that gentian violet will inhibit the growth of almost all gram-positive organisms in a dilution of 1:100,000, and that methylene blue, in the same dilution, is bacteriostatic for staphylococci. Lewis has emphasized the selective action of trypan red and of isamin blue for lesions of tuberculosis, and, following this lead, Krauss has since succeeded in preparing combinations of these dyes with iodin. Methylene blue has been shown also to have a selective action for tubercle bacilli. May studied the germicidal action of basic fuchsin which he found effective in a dilution of 1:1,000 within five minutes, toward bacilli of typhoid, colon, enterides (Gärtner) and dysentery and staphylococci. He also found that basic fuchsin is relatively nontoxic and very diffusible, and may be used in the bladder without irritation in a 1:100 dilution. May further made the important observation, which we have confirmed, of a marked difference in the action of fuchsin in warm and cold solutions, the dye being for the most part almost inactive in the cold. Dahlia has recently been advocated for infections, Simon using it in erysipelas and Ruhrāh applying it in 4 per cent. strength to the throat. Many of the anilin dyes are quite toxic. Churchman found that the injection of 10 c.c. of a 0.5 per cent. solution of gentian violet in rabbits, was without effect in some but in others caused death within a few minutes, no explanation for which could be found at necropsy. Gentian violet is irritant in the bladder, in which it produces a considerable inflammatory reaction.

These facts, together with the known selective activity of the kidneys in the excretion of many dyes (phthalein group, indigocarmin, etc.), definitely link this subject to the future of internal urinary antisepsis. The application is necessarily limited, and each dye and all possible combinations, synthetic and otherwise, after the above biochemical indications, will have to be studied as to their power of antisepsis, their toxicity, irritant properties and stability in the body and their ready excretion in the urine. Undoubtedly substances exist, or will be formed, which will prove ideal for selected infections. Personal studies, limited by inability to secure dyestuffs and of which this report is preliminary, are briefly the following:

METHYLENE BLUE

The particular and limited value of methylene blue as a urinary antiseptic has never been emphasized. During the thirty years in which it has been used as a test of renal function, many facts regarding its excretion have been determined. Only about 50 per cent. of the dye is excreted by the kidneys, the remaining half being eliminated mostly in the stools, which often become as highly colored as the urine. The pigment is not an individual chemical substance (Underhill and Claussen) and often undergoes decomposition in its passage from the blood, appearing in the urine in the form of leukoderivatives which are, for the most part, nonbacteriostatic. (Mueller has found six of these chromogens.) These end split-products may often be restored to the basic methylene blue by agitation, or by boiling after the addition of acetic acid. Decomposition of the dye into chromogens may also occur as the result of bacterial activity. I have always observed a loss of color in solutions of the dye in which bacteria grow. The *Bacillus coli communis* will decolorize a 1:1,000 dilution but staphylococci will not cause loss of color until a dilution of 1:100,000 or greater is reached. This partial or complete bacterial decolorization is a frequent observation in patients with pyuria, the urine in such cases often acquiring only a dirty green hue even when large doses of the dye are ingested. Reactivation, or return to blue color, has often been beautifully observed when hexamethylenamin is given simultaneously. This result is probably due to the urine content in formaldehyd which has been found by test-tube experiment to usually reactivate the dye. The frequent presence, however, of an alkaline urine

from urea decomposition in these cases largely destroys the associated value of hexamethylenamin.

Subcutaneous injections of methylene blue are always painful. The dye may be taken by the mouth, however, in relatively large doses. Ten grains four times a day have been given, and have shown no toxic or irritating action. From 3 to 6 grains is a good average dose, but 1 grain is too small. The dye is contraindicated in large doses in cases in which there is severe nephritis, as it has been shown that the excretion of a small fraction of a grain in these cases may be prolonged for fifteen or more days.

Personal studies show that methylene blue is a very weak and slow germicide. It will not kill the staphylococcus, streptococcus or *Bacillus coli communis* under twenty-five minutes even in a 1:10 dilution, and even after forty-eight hours' exposure it shows little selective power as a germicide. As a bacteriostatic, however, it is very selective and powerful in its action. It completely inhibits the staphylococcus in a 1:150,000 dilution, the streptococcus in a 1:80,000, and the colon bacillus, however, in only a 1:1,000 dilution.

Clinical results support the bacteriologic findings. Inactivation of the dye from bacterial or metabolic decomposition greatly weakens its practical value. The clinical results in several cases of urinary tuberculosis, such as relief from urinary frequency and irritation, may possibly be accounted for by the observed selective action of the dye toward tuberculous lesions.

Other Anilin Dyes: In view of the unfinished investigation of the toxic and biochemical properties of other dye stuffs when applied as urinary antiseptics, reference will only be made at this time to their bacteriostatic power. Rosanilin acetate has a definite selective action toward staphylococci and streptococci, but its inhibitory power over the growth of colon bacilli is not much greater than its germicidal action for the same period of time. (Kills *B. coli* in forty-eight hours in a 1:800 dilution, but will not inhibit its growth in a weaker dilution than 1:1,000.) The action of this dye, as well as that of the others studied, was seen to be markedly influenced by temperature. There was a marked difference between the tubes kept at room temperature and those placed in the thermostat at 37 C.

CONCLUSIONS

The foregoing considerations and findings may be summarized as follows:

The treatment of urinary infection should be selective, according to the clinical findings in each individual case. The clinical study should determine the type of infection, its possible source and the conditions accessory to its spread or chronicity. The use of urinary antisepsis should always correlate these findings and supplement the necessary surgical or other measures.

Treatment by disinfectants may be external or internal. The properties required of a substance in order to give satisfactory external disinfection are a germicidal power which will kill the organism in the limit of time of exposure and with this, stability of chemical structure, penetrating action, but neither toxic nor irritating action. No such ideal substance is known. Because of this lack, clinicians have come to rely on strong inhibitory substances for external use. An internal antiseptic, which will give constant inhibitory effect, will be more efficient than an indifferent external germicide used periodically. The properties required of a substance for internal urinary disinfection are that it should be bacteriostatic in weak dilution, diffusible, stable, neither toxic nor irritating and largely eliminated by the kidneys. No such ideal internal antiseptic is known.

Hexamethylenamin is the most efficient in the largest number of cases, but has very definite limitations. It is of value only by virtue of its conversion into formaldehyd which takes place gradually in an acid urine. The alkalinity of the urine in infections which produce decomposition of the urea cannot in the majority of cases be changed by feeding acid-producing drugs. The necessity of concentration and time for the accumulation of formaldehyd in antiseptic amount largely destroy the value of the drug for kidney antisepsis, except in some cases of hydronephrosis; for bladder antisepsis in cases with polyuria or frequent urination, except when retention in some form is present; in cases of urinary fistula, notably postoperative prostatics during the period of incontinence, and in cases with continual bladder drainage as in true incontinence or with retention catheter; and for urethral antisepsis no matter what the infection. The greatest usefulness of hexamethylenamin is in bladder prophylaxis in cases in which the above urinary conditions are not present.

A study of the selective antiseptic action of some basic dye stuffs, their stability and pentrating action, the innocuous nature of many and the known proclivity of the kidneys for their excretion emphasize the future importance of such substances as internal urinary antiseptics. The bacteriologic findings with some of the substituted compounds of the rosanilin group indicate their possible application in the treatment of colon bacillus infections of the urinary tract. The selective action toward tuberculous lesions of trypan red and allied dyes opens up an interesting line of therapeutic application.

Methylene blue, in a dilution of 1:150,000 will inhibit the growth of staphylococci. It is diffusible and relatively nontoxic, but only about half of the amount ingested is eliminated by the kidneys and, often, some of this in the form of inactive end split-products. The absence of a deep blue urine indicates imperfect antisepsis, which may be due to this metabolic decomposition or to a delayed or deficient excretion as the result of renal disease, in which case continued use of the dye may cause severe renal injury. In the presence of urinary infection bacteria themselves may decompose the dye into these inactive chromogens. Formaldehyd tends to reconvert these less basic leukoderivatives into the original right-spectral dye, therefore, hexamethylenamin may often be advantageously given with methylene blue in these cases of bacterial decomposition of the dye; but the urine must be acid and in most of these cases there is an associated bacterial decomposition of urea which makes the urine alkaline. Doses of from 3 to 6 grains may be given four times a day for several days, when it is advisable to discontinue its use for a few days. The ability of staphylococci to adapt themselves to the presence of the dye shows the need of finding a substitute so that the two may be used alternately. The dye is of particular value in renal or bladder infections due to the staphylococcus, but is valueless in pure urethritis from whatever cause. The great

objection to its use is its disagreeable staining properties.

The value as internal urinary antiseptics of other substances such as salol, oil of sandalwood, salicylic, boric and benzoic acids, is very limited. Their use for antiseptic purposes in urethritis is not justified. Relief of urinary irritation is more often better secured by the use of sodium bicarbonate.

521-522 Physicians Building.

ABSTRACT OF DISCUSSION

DR. J. A. FULTON, Astoria, Ore.: Dr. Hinman omitted the mention of one germicide which I believe has not been sufficiently studied—that is, heat. It is true that you cannot apply heat, perhaps, to the entire urinary tract. In antisepsis of the bladder where you use an antiseptic such as methylene blue, potassium or permanganate, they do not penetrate, but heat will penetrate. I cannot understand why the question of heat as a germicide has not been referred to, because it does penetrate.

DR. MARTIN KROTOSZYNER, San Francisco: An excellent urinary antiseptic which Dr. Hinman did not mention is quinin, which in doses of 10 to 15 grains, if administered precystoscopically or preinstrumentally, exhibits excellent antiseptic properties, and, in this respect, according to my experience, exceeds the efficacy of equally strong doses of hexamethylenamin. With regard to the relative value of various external urinary antiseptic remedies, I have found it to be the wisest plan to limit oneself to the use of one or two drugs and to become sufficiently experienced in their efficacy in order to obtain uniformly good results. In my hands nitrate of silver has always exhibited better and more lasting results for lavage of the genito-urinary tract than any other silver component. Nitrate of silver has all the properties that Dr. Hinman considers to be essential for the efficacy of an external urinary antiseptic. It is penetrating, it is antiseptic and it is, besides that, flexible in its dosage, so that a patient who at first reacts very severely to a very weak solution gradually will tolerate injections of much higher concentrations. Thus, I have been able to obtain excellent results from renal lavage with solutions up to 2 and 3 per cent.

DR. W. F. BRAASCH, Rochester, Minn.: Silver nitrate is unquestionably a very valuable aid in the treatment of renal infection. Recently Geraghty called our attention to the use of a denser solution of silver nitrate, advising as high as 5 per cent. It has been my experience, however, that it is not necessary to use such dense solutions. It is best to commence with a solution, say 1:500 or 1:1,000 and gradually work up to 1 per cent. I think 1 per cent. is just as efficacious as 2 or 3 or 5 per cent. Five per cent. can cause considerable reaction; I have seen a number of cases that have given evidence of renal insufficiency as the result of a 5 per cent. injection of silver nitrate. It is difficult to understand why silver nitrate should be of so much more value in some cases of renal infection than in others. It has been my experience that silver nitrate is of value in the great majority of cases. We have recently reviewed several hundreds of cases and there were very few that were not benefited by its use, and many of them were evidently cured.

Whole-Time Health Officers.—You may ask if the small cities can afford whole-time men, why are the larger cities not employing whole-time men? I believe the answer is this—"politics." Apparently the only way a whole-time man should consider a position in one of the larger cities is to go as a loan from the State Board of Health, or from the United States Public Health Service. Under this system when it would seem advantageous he could return and a new man take his place.—Report of the Public Health Commissioner of the Minnesota Public Health Association.

LATE RESULTS OF EXCISION OF THE TRANSVERSE PROCESS OF THE FIFTH LUMBAR VERTEBRA*

FRED J. FASSETT, M.D.
SEATTLE

Notwithstanding the study given to the region of the lumbosacral junction in the past decade, so few reports of the results of excision of the transverse process have appeared that these three cases may be worth putting on record.

CASE 1.—A man, aged 34, formerly a sailor, now a book salesman, was first seen, April 4, 1910. His complaint was of a "binding" feeling and increasing pain of gradual onset from the hip to the heel on the back of the left lower extremity. He recalled no strain or other injury. The examination was negative except as follows: There was a marked tenderness at about the top of the left sacro-iliac joint, a moderate list to the right and muscle spasm limiting all motions of the lower spine; when the knee was fully extended the left hip could not be flexed more than 45 degrees.

The roentgenogram was negative except as to the transverse processes of the fifth lumbar vertebra; that on the left (the side on which there was pain) was of moderate size and its shadow did not, in this plate, overlap the ilium or sacrum. The process on the right was much larger, distinctly bifid and appeared to articulate with both the ilium and the sacrum (Fig. 1).

During the two months following this examination, adhesive strapping, a canvas belt, plaster jackets in the erect posture and in hyperextension, and plaster spicas were applied. Meanwhile the symptoms all increased. The pain became so severe and constant that the patient eagerly accepted the suggestion of operation even though he knew that it was decidedly experimental in character. At that time I knew that such an operation had been done by Dr. Z. B. Adams of Boston, but was unable to learn either his technic or his results.

Operation was performed in June, 1910. An incision about 4 inches long was made midway between the spinous processes and posterior-superior spine of the right ilium through skin, fascia, and muscle to the bone. It will be noted that this operation was on the side opposite to the side on which there was pain. We removed as much of the bony process which we encountered as we dared, considering that the work had to be done almost exclusively by the sense of touch. The fascia was closed with catgut and the skin with silkworm-gut. The patient was in the hospital ten days. The pain at night, which during the month before the operation had been the most distressing symptom, was temporarily relieved. The pain about the left sacro-iliac joint persisted. A roentgenogram taken two weeks after the operation showed that the transverse process had been possibly thinned but not removed by the operation.

In October, four months after the first operation, the old symptoms had all returned. October 18, a second operation was performed (Fig. 2). The incision was made nearer to the crest of the ilium than before. This made the approach to the transverse process more easy, but it was still very difficult. To serve as a landmark, the transverse process of the fourth lumbar vertebra was first identified and, because it might give more room, removed with a wire saw. The transverse process of the fifth was then exposed and an attempt made to pass a wire saw around it in the same manner but without success. The process was then freed from the ilium and sacrum by blunt dissection and from the vertebra by the chisel. At this point the fragment tipped forward on a hinge of fibrous tissue and was recovered and removed with great difficulty. During this procedure there were several sharp twitches in the muscles of the right leg. The wound was then closed as before. During the next ten days the patient became gradu-

* Read before the Section on Orthopedic Surgery at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

ally more comfortable, except for slight muscular stiffness in the back and paresthesia in the right foot. The pain and stiffness decreased very rapidly so that the man was soon able to work. He has worked steadily during the past four years. I have seen him occasionally during that time. His only complaint is of a weakness in the right foot. This appears to be a slight but actual paralysis of the muscles of the anterior tibial group, for which no other cause can be found than trauma to the nerve roots at the time of operation. In spite of this symptom the patient regards the operation as a distinct success.

Case 2.—A man, aged 20, a shingle weaver, was first seen july 6, 1911. He gave a history of trouble with the back for the preceding two or three years. The disability had increased much more rapidly in the previous four months and had completely incapacitated him for work. The roentgenogram showed a transverse process of the sacral type on the left side of the fifth lumbar vertebra which formed a distinct articulation with the ilium. There was a marked scoliosis, left dorsal, right lumbar. It was impossible for the man even to approximate an upright position on account of the pain. There was distinct tenderness over the left sacro-iliac joint.

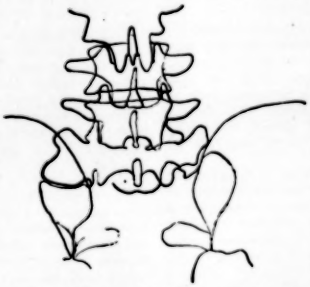

Fig. 1.—Appearance of right transverse process of fifth lumbar vertebra in Case 1 before operation.

On July 15, 1911, operation was performed essentially as in the second operation on the patient in Case 1, except that the operation was on the same side as the pain and the transverse process of the fourth was not disturbed. The roentgenogram taken soon after the operation showed that the transverse process of the fifth had been removed save for a narrow spur along the lower margin.

Clinically the pain was considerably relieved and the posture much improved. The man returned to work, but was unable to work all day because of the return of pain in his back. A year and a half from the first operation the symptoms were still present and a second operation was performed. During this operation there was distinct jerking of the leg muscles. Following the operation there was severe pain in the leg on the operated side. This gradually disappeared but there remained a partial paralysis and atrophy in the anterior tibial group of muscles of the left leg.

The man was last seen May 1, 1915, two and one-half years after the last operation. The pain has been wholly absent for more than two years; the posture shows no trace of the former scoliosis. The weakness in the anterior tibial group of muscles is still present, and the patient says that this occasionally troubles him in running. He regards this, however, as of very slight importance compared with the disability from which he was relieved by the operation. A roentgenogram taken six months after the operation and another taken this year are suggestive of partial regeneration of the process and raise the question whether this regeneration might be expected to occur.[1]

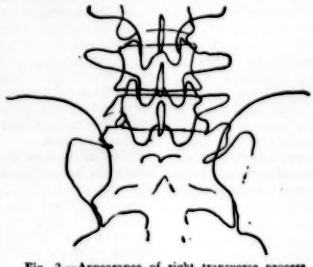

Fig. 2.—Appearance of right transverse process of fifth lumbar vertebra after second operation.

Case 3.—A man, aged 35, an electrician, was first seen Jan. 6, 1914. For several years, on making certain motions, he had "catches" in his lower back. These have several times been so severe that the patient was taken home in the ambulance. The examination was negative except as to the posture and as to the roentgenogram. The patient stood with an exaggerated lordosis, but no lateral deviation. When the lordosis was most marked, that is, when the patient wholly relaxed, there was slight pain in the middle line where the spinous process of the fifth lumbar appeared to overlap the spinous process of the first sacral. There was little muscle spasm, but previous experience had made the patient very loath to attempt certain movements, especially forward bending followed by rotation to the left.

The roentgenogram showed a fifth lumbar vertebra with transverse processes of an intermediate type, the shadows of which overlapped the shadows of the ilium in varying degrees in different plates (Fig. 3). There appeared to be no such complete articulation as was found in the preceding cases. All the customary methods of fixation were faithfully tried, but nothing short of a full-length plaster jacket was adequate to protect against the painful attacks. As this interfered seriously with the man's occupation, he sought relief from practitioners who promised more than I could conscientiously promise. One week later he was found in a hospital in genuine agony as a result of an osteopathic or chiropractic "adjustment" received the previous day. The patient had spent the night on the floor of the practitioner's office quite unable either to move or to be moved.

Two weeks later (April 1, 1914) operation was performed on the right side in a manner much like that of the second operation in Case 1. This operation was followed by almost complete sensory paralysis in the right leg. There was no loss of motor power. On the twenty-fifth day the pain was largely relieved and the anesthesia had given place to a paresthesia. The patient left the hospital, but used crutches for about ten days. During the summer, fall and winter of 1914, the patient was able to do hard work as an electrician, crawling into low and narrow spaces with no return of his old pain. The side of the back which was operated on has remained free from pain from that time until the patient was last seen, May 20, 1915 (Fig. 4).

In January, 1915, however, the patient worked for a long time leaning over a low railing. This was followed by a series of "catches" somewhat similar to the old ones, but less severe and strictly confined to the left (the unoperated) side. The patient had been so impressed by the relief obtained on the other side that he argued that the two sides looked so much alike in the roentgenogram that operation should be done on the other side as well. In preparation for this operation, some dissections were made with this problem in mind: Could an approach to the transverse process be found so that, guided by the sense of sight as well as touch, the operator might excise the bone? As a result of these studies a method was devised which was employed in the next operation, which was performed Feb. 2, 1915. A curved incision with its convexity outward was made from the second lumbar to the third sacral spine. The skin flap was reflected inward to the middle line. A muscle flap, consisting of the lower end of the erector spinae group and its aponeurosis, was detached from the crest of the ilium, the posterior surface of the sacrum and from the lumbar spinous processes and reflected upward. This left a fossa having for its walls the crest of the ilium on one side and the spinous processes and laminae

1. This man was a patient of Dr. Park Weed Willis of Seattle, who showed me the patient while under his treatment, and permits me to include the case in this report. This case and the preceding one were reported by Dr. H. B. Thompson in Northwest Medicine in 1913.

on the other; and for its floor the articular processes, and, at a much deeper level, the transverse processes of the fourth and fifth lumbar vertebrae. The transverse process of the fifth was separated from the vertebra with a chisel. It was found attached to the ilium by a strong fibrous band. As to whether or not anything representing a bursa was present, I am unable to say. The process was separated from the ilium and from the ligaments and from the layer of fat on its ventral surface by blunt dissection. The muscle flap was replaced and its aponeurosis was sutured in place with kangaroo tendon and heavy chromic catgut. The skin flap was replaced and sutured with silkworm gut. No fixation was applied.

The symptoms following this operation were less severe than those following the first. There was paresthesia but no anesthesia in the lower extremity, and the hospital stay was one week less than before. The convalescence appeared to be quite promising when on February 22 the patient slipped and fell backward, striking the exact center of the field of the second operation against the sharp corner of a heavy chair.

This was followed by severe pain and stiffness in the muscles of the back and an increase of the paresthesia and tenderness in the leg and foot. After a few weeks' rest, massage of the back was employed, which distinctly hastened the disappearance of symptoms both in the back and the leg. This man was last examined May 20, 1915 (almost four months after the last operation); he was just beginning to go without his crutches, and to do gymnastics, which he had found helpful in restoring his strength after his first operation. His greatest complaint at that time was of an intense tenderness and burning in the foot, but especially in the upper surface of the foot and the anterior surface of the leg.

It is to be regretted for many reasons that the question of the relative merits of the two methods of approach has been beclouded by the unfortunate fall which marred what appeared to be an otherwise satisfactory convalescence.

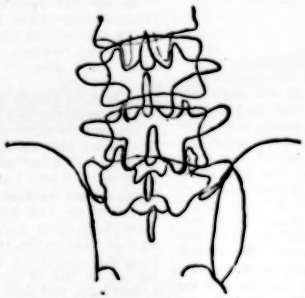

Fig. 3.—Appearance of transverse process of fifth lumbar vertebra in Case 3 before operation.

COMMENTS

These three men appear to have obtained, through this operation, permanent relief from lumbar or sciatic pain which had not been relieved by a faithful trial of many other methods.

The difficulties and dangers of this operation are sufficiently great to cause it to be regarded only as a method of last resort.

The chief danger appears to lie in injury to the great nerve trunks, and of these, the trunk containing the fibers which go to the anterior tibial nerve appears to be particularly exposed. Since these fibers are usually traced to the first and second sacral nerve roots the reason for this vulnerability is not obvious.

The question of the mechanism by which the pain associated with these transverse processes is brought about has been the subject of considerable study. The fact that in one of the cases relief followed the removal of the process on the same side as the pain, and in another the removal of the process on the side opposite the pain, makes the theory of simple pressure of the process against the nerve trunk seem hardly adequate. The theory that the process furnishes a point about which, as a fulcrum, an extreme leverage is brought into play when the upper parts of the body start to rock on the lumbosacral joint, seems to me quite plausible. Such a leverage, in an unguarded movement, would strain every joint in its neighborhood including, of course, the sacro-iliac joints. It has been suggested that certain anatomic types are prone to lumbosacral trouble. Is it not possible that the unfortunate leverage above described is one very efficient means of straining the sacro-iliac joint? If it be this function of a fulcrum in which inheres the possibility of trouble, it would seem advisable not only to remove the part of the process in actual contact with the ilium, but to amputate the process as near the body of the vertebra as possible. In other words, it is desirable that even in the position of maximum lateral bending the process should be unable to touch the ilium or the top of the sacrum.

Fig. 4.—Appearance of transverse process of fifth lumbar vertebra in Case 3 after first operation.

At least four methods of approach to this joint have been suggested: the simple incision through the erector spinae muscles, the osteoplastic reflection of a portion of the crest of the ilium, the ventral route, and the muscle-flap method herein described. These three cases simply show that the process can be removed without serious damage by the first method or by the last. It would appear that a certain number of cases will present themselves in which the excision of the transverse process is the proper method of treatment. In view of this fact the question as to the best method of approach is one which is worthy of further study.

1163 Empire Building.

ABSTRACT OF DISCUSSION

DR. M. S. HENDERSON, Rochester, Minn.: While these spinal abnormalities are not common, they do occur in the cervical and in the dorsolumbar regions. In the fifth lumbar we frequently see a transverse process which is really an exaggeration of the costal process of the transverse lumbar vertebra. I think in the majority of cases they give no symptoms, but when definite and severe symptoms are present they should be operated on. I have seen probably thirty of these cases and operated on only three. My technic has been a little different from Dr. Fassett's, in that I have not considered it necessary to chip off the entire process, but simply knock off the exaggerated costal element of the transverse process so it would not impinge on the ilium. Whether this is sufficient or not, I cannot say, because my cases have not been numerous enough. One patient did not do very well. One, so far as I know, is cured, and the other is too recent to report as to the definite end-results; I operated on her only two months ago, but her pain has ceased. It is difficult to chip off the process, and I think Dr. Fassett's method of performing the opera-

tion is good. None of my patients has had disturbances of the nerve afterward, perhaps because I did not go far enough to remove the entire process. There certainly is a group of cases which should be operated on, but I believe the majority of cases, as in cervical ribs, give no symptoms, and probably should be let alone.

DR. E. W. RYERSON, Chicago: I have operated on only one of these patients, a woman from South Carolina, who had a very large bifid process. She had undergone two laparotomies on the left side and nothing was found, so that it was pretty evident she had a great deal of pain from this condition. I found the operation unusually difficult, but it was easy to get down to the process by making an incision well to the outer side of the erector spinae muscles. If one goes through the muscles not sufficient room can be gained, and it is not perhaps well to cut through such a large body of muscle; but going just to the outer side of the muscle the access is very easy to the outer part of this transverse process, although it is extremely difficult to get it out. In this operation I only got out the upper half of this bifid process. Nevertheless this patient was much relieved. She had paresthesia for three or four days afterward, but this entirely disappeared. Apparently she is at present free from symptoms. The difficult thing to understand is why removing the top of a bifid process which was not articulating with the ilium should do any good, but the fact is that it has relieved this patient. We do not know all about the nerve disturbances and nerve supplies, because, as Dr. Fassett said, the supply for the anterior tibial nerve comes from higher up; but the paresthesia my patient complained of was distinctly over the anterior tibial region. I cannot see how these patients can get more relief than by submitting to an operation, because they will not consent to wear through life a long plaster jacket or other apparatus.

DR. WALLACE BLANCHARD, Chicago: I reported at the last meeting of the American Orthopedic Association removal of the transverse process of the fifth lumbar vertebra that impinged on the wing of the ilium. It showed an elongation about twice the normal, as compared with the transverse process of the other side. A perpendicular incision of about 5 inches through the erector spinae muscles and direct down to the transverse process, removing by chisel and forceps, was not an overdifficult operation. The transverse process could be easily reached and removed. After resection the Roentgen ray showed a stump and a space between the stump and the wing of the ilium. There were no bad symptoms following the operation—of anesthesia, hyperthesia, etc., that have been told of by Dr. Fassett, and the patient made a good recovery. The patient had been paralyzed from the shoulder down through the left side to the left leg, and had had two abdominal operations, and the appendix had been removed, all in the hope of relieving painful conditions that were undoubtedly caused by the impingement of the transverse process and the ilium. The cure was immediate and there were no bad symptoms following the operation.

DR. ROLAND MEISENBACH, Buffalo: In connection with the operation for the removal of the transverse process of the fifth lumbar vertebra, a point that should be emphasized is that great care must be taken so as not unduly to divide nerve structures in the region of the lumbar plexus. I think that operation of these cases should only be undertaken in the severe type, and all other means should first be attempted to relieve the symptoms. There is one case that is of interest, which is rather unique, and which was sent to me for relief. It was a man of good musculature who had been employed at heavy work. At the time of the accident he was holding a rope taut. The rope suddenly parted and he was thrown backward to the ground. He complained of severe pain in the lower part of his back and was taken to the hospital. At the time I saw him, a few months after the accident, he complained of severe pain whenever he turned around in bed or attempted to walk, or on any lateral motion of the body. The radiograph showed that the transverse process of the fifth lumbar vertebra had been obliquely fractured and the fragments separated and displaced, so that the outer portion was drawn downward. A large callus had formed. This callus expanded and amalgamated with the ilium and the sacrum. To give the man relief it was necessary for me to remove the process, which was done. I think in general that a small incision should be made. By a small incision I mean after the first layer of muscles has been divided, and I also think it is much better to divide the muscle fibers with blunt dissectors until one reaches the transverse process. This minimizes the hemorrhage and facilitates the removal of the process. If the periosteal dissector or a chisel is used to peel the periosteum of the process, the chain saw may be brought around and the process removed. I think the use of a chain saw is much better than the use of a chisel, because with the chisel the process is brought out in a piecemeal fashion and there is more danger of injuring the structures. I wish also to emphasize the fact that just anterior to the process one is apt to meet nerve structures and ganglia that should not be touched with the instrument. In one instance I remember that the patient suddenly stopped breathing when these were touched, and I only mention it as a point of interest which should be kept in mind in removing the transverse process of the fifth lumbar vertebra.

DR. J. P. LORD, Omaha: I wish to report the development of pain on the second day of a recent case. The pain became progressively worse after twenty-four hours. Coming on so late, it occurred to me that it was induced by hemorrhages and infiltration. This might readily be imagined to take place because of the loose tissues in this region, the exudate enveloping these nerve trunks. There was muscle paralysis also, and this lasted for four or five days, when rapid improvement ensued. I would suggest this as a possible explanation of the pain.

DR. FRED. J. FASSETT, Seattle: There is only one thing to add, and that is on the matter of a choice between a chisel and the wire saw. With me it was not a matter of choice at all. I started in equipped with very little except my knife and wire saw, it looked so easy in the roentgenogram. But in none of these cases did I use the wire saw, except when I removed the fourth process. When it comes to the fifth, the passing of the wire saw around the neck of the process required more nerve than even I have developed.

ANALYSIS OF FOUR HUNDRED CASES OF LOBAR PNEUMONIA* *

J. G. CROSS, M.S., M.D.
MINNEAPOLIS

There were 83,778 deaths from pneumonia in the United States registration area in the year 1913, or 132.4 deaths from this disease per hundred thousand population. In Minneapolis there were 348 deaths from the same cause, or 104 per hundred thousand population. For comparison, in the same year 80,812 persons died from pulmonary tuberculosis in the United States registration area, or 127.7 per hundred thousand population. In Minneapolis there were 383 deaths from pulmonary tuberculosis, or 118 per hundred thousand population. In 1914 there was an increase in the death rate from pneumonia and a decrease in the death rate from pulmonary tuberculosis.

These figures are presented to fix our attention again on the importance of pneumonia. With cancer and pulmonary tuberculosis it forms a dread trio. The death rate from pneumonia has not decreased. In some localities statistical observation shows that not only is pneumonia on the increase but in certain out-

* Read before the Minnesota State Medical Association, Rochester, Oct. 1, 1915.

breaks it is actually more fatal than it was in former periods of time. From the figures given above it would seem that less advance has been made in the prevention and treatment of pneumonia than in prevention and treatment of tuberculosis.

In an attempt to study certain features of pneumonia, data in a large number of cases of lobar and bronchopneumonia at the Minneapolis City Hospital for the years 1911, 1912, 1913 and 1914 have been collected and analyzed under the headings of age, sex, occupation, date of onset, character of onset and initial symptoms, later symptoms, the maximum temperature, laboratory findings, physical findings, the white blood count, the complications, the termination, whether by death, lysis or crisis, and necropsy findings, if a postmortem examination was made. This analysis has borne out many conclusions which are not new, and has verified some impressions which needed the corroboration of actual statistics. In the present paper I intend to present an abstract of the results of this analysis as regards lobar pneumonia alone.

As will appear in a later statement as to the time in the disease at which patients are admitted, it is evident that the mortality of lobar pneumonia at the City Hospital is much higher than it would be under average conditions in private practice. Several factors contribute to this. First of all, the City Hospital admits that large class of homeless or destitute patients who are careless of the onset of an acute disease. It is the rule that these people neglect the first few days of an acute illness until compelled to seek help through inability to care for themselves. Many patients are weakened by bad hygiene or vicious habits, together with irregular, too little or improper food. Many are chronic alcoholics. Acute alcoholism also plays a larger rôle than would be the case in the same number of private patients. Another factor in the free hospital treatment of pneumonia, as in other diseases, is the frequent lack of intelligent cooperation on the part of the patient. Ignorance of disease and fear undoubtedly have a great deal to do with the outcome.

Another striking fact brought out is that not only do the number of cases vary in different seasons and the same season of different years, but the mortality is much greater sometimes than at others. This difference in mortality has not been satisfactorily explained and is probably due to the combination of a number of causes rather than to any one variable factor. There is undoubtedly a difference in the virulence of the pneumococcus infection, but this alone does not explain the variations in mortality or the incidence of the disease. The undoubted fact that many people harbor the pneumococcus in their respiratory tracts, without becoming ill, shows that individual resistance plays a very great part in the number of cases in the presence of infection. The influence of season is, of course, apparent.

There were 369 cases of lobar pneumonia at the City Hospital in the four years 1911, 1912, 1913 and 1914. Of these, 117 patients died—a mortality of 31 per cent. Chart 1 illustrates the death rate at the ages from 1 to 5, 5 to 10 and then by decades. It was found necessary in analyzing the cases of children to separate those under 5 and over 5, the mortality was so strikingly different in the two five-year periods. As will be seen, the mortality in the succeeding decades rises steadily and consistently.

In Chart 2 is shown the termination of the cases in which the patients recovered by lysis or crisis, according to the same age periods.

As to the day on which crisis took place, we find a surprising condition of things in this series of cases. There were 125 cases in which the exact date of onset of the disease and the time of crisis could be determined. It is found that there is no regularity in the time at which the crisis occurred. Table 2 illustrates this fact. It will be seen that while in 80 per cent. of the cases the crisis occurred before the tenth day, in seven cases it fell on the tenth; in nine, on the twelfth; in six, from the seventeenth to the twenty-first day, and in two was delayed until one month after the onset.

In 264 cases the initial symptom was definitely known (Table 3). In 121, or 46 per cent., a chill ushered in the disease; next most common was pain in the side, back or chest; thirty-eight cases, or 14 per cent., had this first; in thirty-three, or 12 per cent., a cough was the first thing evident; in twenty-one, or

TABLE 1.—MORTALITY STATISTICS

Causes of Death	U. S. Registration Area, 1913		City of Minneapolis			
			1913		1914	
	Number	Per 100,000	Number	Per 100,000	Number	Per 100,000
All causes	890,848	....	3,862	....	4,115	....
Pulmonary tuberculosis	80,512	127.7	383	118	385	112.09
Pneumonia	83,778	132.4	348	104.3	433	126.06
Cancer	49,928	78.9	276	81.9	311	90.5

TABLE 2.—DAY OF CRISIS AFTER ONSET IN 125 CASES OF LOBAR PNEUMONIA

Days After Onset	No. of Cases
3	12
5	23
6	4
7	24
8	22
9	16
10	7
12	9
17 to 21	6
1 month	2

TABLE 3.—INITIAL SYMPTOM IN 264 CASES OF LOBAR PNEUMONIA

Symptom	No.	Per Cent.
Chill	121	46
Pain	38	14
Cough	33	12
Headache	21	7
Vomiting	12	4
Fever	12	4
Other symptoms	27	10

7 per cent., it was headache; in twelve, or 4 per cent., vomiting was first noticed; in twelve, or 4 per cent., fever only, and other symptoms of various nature in twenty-seven cases, or 10 per cent. These symptoms naturally occurred in combination or one rapidly following the other, but it is intended to note in this connection only that which first called the attention of the patient to his abnormal condition.

Examination of the urine (Table 4) shows the presence of abnormality in 237 of the 369 cases. This does not mean, however, that the remaining patients did not have abnormal urine findings. Many of our patients came in moribund, and for that or some other reason the urine could not be obtained in every case. In the 237 cases, however, sixty-one, or 25 per cent., showed the presence of albumin; twenty-seven, or 11 per cent., showed casts in the urine, and in 149 cases, or 63 per cent., both albumin and casts were present.

It is interesting to note the location of the consolidated area in the lungs (Table 5). In 333 cases this has been recorded. In thirty-one, or 9 per cent., the consolidation was in the right upper lobe; in ninety-nine, or 29 per cent., in the right lower lobe; in ten, or 2 per cent., in the right middle lobe; in twenty-one, or 6 per cent., in the left upper lobe; in eighty-nine, or 26 per cent., in the left lower lobe. The entire right lung was involved in seventeen cases, or 5 per cent., the entire left side in eleven, or 3 per cent. The notation of "double lobar pneumonia" is made in twenty-nine cases, or 8 per cent. In twenty-six cases, or 7 per cent., no area of dulness could be made out.

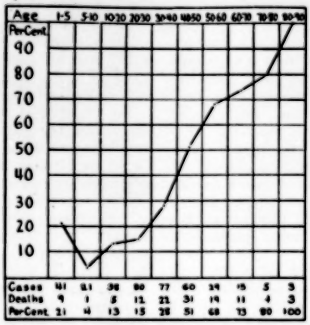

Chart 1.—Deaths from lobar pneumonia by age decades.

TABLE 4.—EXAMINATION OF URINE IN 237 CASES OF LOBAR PNEUMONIA

Findings	No.	Per Cent.
Albumin present only	61	25
Casts only	27	11
Both albumin and casts	149	63

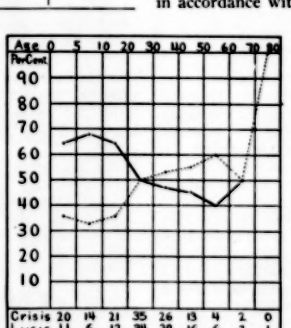

Chart 2.—Termination in 369 cases of lobar pneumonia by lysis and crisis; solid line, crisis cases; broken line, lysis cases.

TABLE 5.—LOCATION OF CONSOLIDATION IN 340 CASES OF LOBAR PNEUMONIA

Location	No.	Per Cent.
Right upper lobe	31	9.2
Right lower lobe	99	29.2
Right middle lobe	10	2.9
Left upper lobe	21	6.2
Left lower lobe	89	26.2
Entire right side	17	5
Entire left side	11	3.2
Double lobar	29	8.5
No area of dulness	26	7.5

These figures agree in the main with those of Preble's 9,333 cases collected in 1904.

It is found in the foregoing that in 67 per cent. of the cases the leukocyte count ranged between ten and twenty-five thousand, as given in Table 6.

Leukocytosis in lobar pneumonia deserves consideration. In this collection of cases an attempt was made to discover the relation, if any exists, between the number of white blood cells and the course of the disease. For this purpose, cases with complications, especially suppurative conditions, were excluded. Children under 14 years of age were also excluded. Those remaining were classified according to the number of leukocytes found, without regard to age, amount of consolidation, or other conditions. As will be seen from Table 7, the six groups have been made according to the number of leukocytes and the percentage taken of cases in each group, which ended in lysis, crisis or death.

A study of Table 7 presents some interesting features. The selection of uncomplicated cases does not, of course, give the same percentage of deaths or termination of lysis or crisis, as does the whole series of cases, including complications and all ages. It is seen at once that a leukocytosis under 10,000 gives 33⅓ per cent. of deaths, which is in accordance with our general knowledge that a low resistance with low leukocyte reaction gives an unfavorable prognosis. We find again that a white count between ten and fifteen thousand or between twenty and twenty-five thousand gives us nearly the normal rate of mortality, namely, 22 and 24 per cent. Between fifteen and twenty thousand leukocytes strangely seems to give a lower mortality, for which no explanation is offered and which may mean nothing. With the higher white counts above 25,000, the mortality is lower by one half, being only 11.3 per cent.

TABLE 6.—LEUKOCYTE COUNT IN LOBAR PNEUMONIA

Count	Per Cent.
Under 10,000	9
Between 10,000 and 15,000	30
Between 15,000 and 20,000	22
Between 20,000 and 25,000	21
Between 25,000 and 30,000	10
Between 30,000 and 35,000	3
Between 35,000 and 50,000	1
Above 50,000	2.5

It may be concluded then, as far as mortality from lobar pneumonia is concerned, that the higher the white blood count the better the prognosis, and that a count of 25,000 or over is decidedly more favorable than under 25,000.

We next notice that the proportion of the cases terminating in lysis and crisis is rather uniform until the white count reaches 20,000 or over. Between twenty and twenty-five thousand an equal number of

cases ended in each way. Between twenty-five and thirty thousand there is a decided preponderance of cases ending in lysis in the proportion of 1:2. When the white count is over 30,000, however, this proportion is almost exactly reversed, there being 33⅓ per cent. ending in lysis and 55.4 per cent. in crisis.

As has been stated, many of the patients in this series were admitted at a relatively late date in the course of the illness. These might roughly be divided into two classes. In the first division are those patients who were admitted in the first acute stages and in another class those in whose cases recovery was delayed beyond the first two weeks and who were brought in later either for delayed resolution or some complication. Without, however, thus classifying them, we find that it is very rare for a patient with lobar pneumonia to be admitted before the third day after the onset, and that 70 per cent. of them are admitted on the third, fourth, fifth, sixth and seventh day in about equal numbers. The bearing of this fact in our mortality records is obvious.

An analysis of cases of bronchopneumonia was made at the same time as the lobar cases. As bronchopneumonia, however, presents such a different aspect and much more varied etiology and course, this abstract does not cover that class of cases.

TABLE 7.—RELATION OF LEUKOCYTOSIS TO THE COURSE OF LOBAR PNEUMONIA IN 184 CASES

No.	Leukocytes Per Cent.	Lysis Per Cent.	Crisis Per Cent.	Deaths Per Cent.
From 5,000 to 10,000...	9.8	38.8	27.7	33.3
From 10,000 to 15,000...	27	44	32	24
From 15,000 to 20,000...	26	41.6	39.1	18.9
From 20,000 to 25,000...	19.6	38.8	38.8	22.4
From 25,000 to 30,000...	7.6	57.1	28.5	11.3
20,000 and over.....	9	33.3	55.4	11.3
Totals	....	41.6	36.9	21.2

The average length of stay in the hospital of those patients with lobar pneumonia who recovered is between two weeks and one month, the larger number remaining about three weeks. It is impossible to go into the question of the complications in the present abstract. In many instances the connection between pneumococcus infection and the complications is not traceable, or at least was not followed out, and a discussion of the ordinary complications would take more time and space than can be expended in this connection. It may be mentioned, however, that the complications noted in the foregoing series included otitis media both with and without mastoiditis, phlebitis, empyema, myocarditis, acute corneal ulcer, decubitis, acute arthritis, all of the different forms of pleurisy, nephritis, meningitis, pulmonary abscess, bronchial asthma, gastro-enteritis, endocarditis and gangrene of the lung.

Donaldson Building.

Duration of Incubation of Syphilis.—One of the editors of the *Annales de Dermatologie*, G. Thibierge, publishes in the July issue a study of this subject. His data establish that in the vast majority of cases the incubation period ranges from fourteen to forty-two days, but that cases are on record in which the interval before symptoms developed was fifty, sixty and ninety days. He cites various authorities to show that the minimum seems to be ten days. In monkeys the range was ten to forty-nine. The average in man is between twenty-five and thirty days.

INFECTIOUS DISEASES

THEIR ADMINISTRATIVE CONTROL IN DIFFERENT CITIES OF THE UNITED STATES

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NEW YORK

The Department of Health of New York City, having made some changes in the rules and regulations regarding certain infectious diseases in order to be consistent with the teachings and opinions of members of the medical profession and the scientific knowledge of today, desired to ascertain the opinions of eminent sanitarians throughout the country regarding these matters.

A questionnaire was therefore sent to the health authorities of sixteen of the largest cities in the United States.

QUESTIONNAIRE

QUESTION 1.—What procedure have you regarding persons exposed to scarlet fever and measles and who are immune by reason of having had this disease?

A. Exclusion from place of business when connected with the sale or handling of dairy or food products.

B. Exclusion of children from schools, it being assumed of course that the patient ill with either scarlet fever or measles is practically and efficiently quarantined.

ATLANTA: A. Persons exposed to scarlet fever and measles must not handle food products offered for sale.

B. Children are excluded from school, but are allowed on the streets.

BALTIMORE: A. They must not remain on the premises in which there is a case of disease. If there is any doubt that this order will be carried out, the individual is prevented from attending to the food and dairy business.

B. If the children are removed to another house, then they can attend school.

BOSTON: A. Persons who have been exposed to scarlet fever and measles and who are protected by a previous attack of these diseases are not held under observation by this department unless engaged in the sale or handling of food or dairy products. If a case of scarlet fever occurs in the family of such a person, unless the patient is immediately removed to the hospital, persons in the family are forbidden to engage in the business of handling of food or dairy products. As regards measles, no action is taken. I am of the opinion that this disease cannot be carried.

B. Such children are not excluded from school.

CHICAGO: A. In scarlet fever we exclude the person unless residence is changed during quarantine. In measles, no.

B. In scarlet fever, yes, unless change of address and furnish certificate of attack from physician. In measles, no, provided a certificate of immunity from physician is furnished.

CINCINNATI: Quarantine for scarlet fever and diphtheria applies to all members of the family. We have an unwritten law that the breadwinner may continue his occupation, provided the patient is isolated and there is no contact.

A. If the parents are engaged in handling food or dairy products, patient must be removed to the hospital or the industry is closed.

B. In case of scarlet fever, diphtheria and measles, all children in the same family are excluded from school until the quarantine is raised by the health department. The history of a previous attack is not accepted as a sufficient reason that persons who have been exposed to scarlet fever, diphtheria or measles should return to school.

CLEVELAND: A. Persons exposed to measles and who are immune by reason of having had the disease are not excluded

from business of any character. Persons exposed to scarlet fever are excluded from business.

B. Children who have had measles may attend school from a house in which the disease exists. They may attend school after eight days after being exposed to scarlet fever, provided they leave the house harboring the disease.

DETROIT: Persons exposed to scarlet fever or measles, and who are immune by reason of having had the disease, are allowed to go following the disinfection of clothing and an antiseptic bath.

A. Such persons are excluded from handling of food or dairy products during period of incubation.

B. Exposed immune children are not excluded from school provided they have been properly released, as above stated, and taken to another house.

NEW ORLEANS: A. If residing at infected premises, complete exclusion is required of such persons. If place of abode is changed to a noninfected one, no exclusion after certain sanitary precautions have been observed.

B. Same requirements are as given in preceding answer.

NEW YORK CITY: A. In measles, no. In scarlet fever, all food handlers stop work or change address.

B. If case is satisfactorily isolated, immunes may return to school at once.

NEW YORK STATE: A. When a case of scarlet fever or measles exists on any farm or dairy producing milk, cream, butter or other dairy products for sale, it shall be the duty of the physician in attendance to report immediately to the local health officer the existence on such farm or dairy of such cases. It shall be the duty of the health officer to report immediately to the state commissioner of health, by telephone or telegram, the existence on such farm or dairy of such cases, together with all facts as to the isolation of such cases, giving the names of the localities to which such dairy products are delivered.

When a case of scarlet fever exists on any farm or dairy producing milk, cream, butter, cheese or other foods likely to be consumed raw, no such foods shall be sold or delivered from such farm or dairy, except under the following conditions:

(a) That such foods are not brought into the house where such case exists.

(b) That all persons coming in contact with such foods eat, sleep and work wholly outside such house.

(c) That such persons do not come in contact in any way with such house or its inmates or contents.

(d) That said inmates be properly isolated and separated from all other parts of said farm or dairy, and efficiently cared for, and

(e) That a permit be issued by the health officer.

B. In cases of measles, schoolchildren are excluded until recovery and disinfection of person, at least ten days from onset. In cases of scarlet fever, at least thirty days and until discharges have ceased and disinfection of person.

OMAHA: In scarlet fever, thorough fumigation of clothes, and a bath are required, and patients are obliged to leave the house in which the disease is quarantined or be quarantined there. In measles there is no restriction if the persons have had the disease.

PHILADELPHIA: A. No person is permitted to go from the quarantined premises to engage in the sale or handling of food or dairy products. We do not permit immunes to remove to another residence after disinfection, etc., and to engage in the said business.

B. All those associated with schools, teachers, children or janitors, who have had scarlet fever, and are therefore immune, may, after an antiseptic bath and disinfection of clothing, remove to premises in which there are no children and may return to school in ten days after such removal on notice received from the bureau of health. If continuing to reside at home, they must not be readmitted until examination by an inspector and notice received from the bureau of health. In measles, such children after removal to premises at which there are no children may return to school fourteen days after such removal on notice received from the bureau of health.

PITTSBURGH: In scarlet fever and measles, after removing from the house under quarantine to a house in which there are none but adults, they may continue their occupations.

A. Must remove from the place of quarantine, and, if a grocer, may after the expiration of eight days return to his work. If a dairyman, he must remain away from the dairy during the entire period of quarantine.

B. Thirty days for scarlet fever contacts and sixty days for patient. Measles, twenty-one days.

PROVIDENCE: No person infected with or living in a family where there is typhoid fever, scarlet fever or diphtheria shall in any way handle or deliver milk or cream or shall serve as cook or waiter in any hotel, boarding house or restaurant. No person living in a family in which there is a case of scarlet fever shall attend school until the warning sign has been removed, or if the patient has died or been removed from the house, until one week after such death or removal. The health officer may enforce this rule against all persons living in the house. No persons living in the house, but not in the family in which there is a case of scarlet fever, shall attend school until one week after the case has been recorded and until such person has been found to show no symptoms of the disease, but any person who has previously had the disease may, at any time, be permitted by the health officer to attend school. No person living in a family where there is a case of measles shall attend school for fourteen days, except that this rule shall not apply to persons who have previously had measles.

ST. LOUIS: Persons who are known to have had scarlet fever and measles, and who have been exposed to the contagion are not restricted in their school attendance or work, provided that the fact that they are immune by reason of a previous attack is certified to by a physician and provided that the person exposed to scarlet fever, and who is living in the same house with the patient, must have the clothing fumigated and change residence during the existence of the disease.

B. Children attending school and exposed to scarlet fever or measles, in a case of scarlet fever change their residence and fumigate their clothing, and are placed under daily inspection for a period of ten days. In measles they may attend school from the house in which the patient is, but must be under daily inspection.

ST. PAUL: Persons exposed to scarlet fever and measles and who are immune by reason of having had this disease are removed from the quarantined house after proper precautions. They are excluded from place of business when connected with the sale or handling of food or dairy products.

WASHINGTON: A. Persons residing in premises in which scarlet fever exists are prohibited, without a permit from the health officer so to do, from handling or selling of foodstuffs or dairy products so long as they continue to reside in the infected premises. This regulation practically excludes every person from engaging in the business referred, because of the very rare instances in which the health officer has issued permits in cases of this kind. This position of the health department is taken regardless of whether the person has or has not had scarlet fever. Persons who have been exposed to scarlet fever, and who do not reside in the infected premises are prohibited from engaging in the sale or handling of foodstuffs and dairy products for a period of seven days from date of last exposure, unless authorized by the health officer to do so. If they have previously had scarlet fever a permit is given them. Persons exposed to measles are not prevented from continuing their work.

B. In the case of scarlet fever, all children who reside in infected premises are excluded from school during the continuance of the case. If they have had scarlet fever they can return to school as soon as the disinfection has been completed; otherwise they are required to remain away seven days after completion of disinfection. Children who have been exposed but who do not reside in the infected premises

are given certificates to continue at school on presenting satisfactory evidence to the health department of previously having had scarlet fever. If they have not had scarlet fever they are excluded for seven days from date of last exposure. In the case of measles, all schoolchildren residing in the infected premises are excluded from school for twenty-one days from the onset of the illness, unless they can present evidence satisfactory to the health department of having previously had measles, in which event they are permitted to continue in attendance at school.

QUESTION 2.—What is your procedure regarding the termination of quarantine of diphtheria and the seeking of "carriers"?

ATLANTA: Quarantine for diphtheria is terminated either on a negative culture or by the physician in charge certifying that all clinical symptoms have been absent for a period of ten days. Carriers are not especially sought by the health department.

BALTIMORE: We determine quarantine after diphtheria when two negative cultures have been obtained from the patient and one negative culture from the other members of the household, taken by our own officers. "Carriers" in school are not sought for except when there is a sudden increase in the number of cases of diphtheria.

BOSTON: All cases of diphtheria are released after this department obtains two successive negative cultures from nose and throat. The last culture is to be taken by a physician from this department. If there is a history of previous sickness in the family or any history of sickness among schoolchildren, said suspects are cultured. If positive and no clinical symptoms of diphtheria, said cultures are tested for virulence.

CHICAGO: Terminate diphtheria on two negative terminal cultures from patient and one from each contact. Contacts' cultures are made at time diagnostic culture is taken; if positive, and there is no clinical evidence, are required to remain in quarantine premises as "carriers." At schools carriers are frequently sought for, and if positive the carrier is quarantined at home until negative culture is obtained.

CINCINNATI: Quarantine for diphtheria continues for fourteen days after disinfection of the premises by the formaldehyd method. The doctor announces the recovery of his patient and sends a culture; if the culture is negative, the district physician visits the patient and takes another culture; if this is negative, the premises are disinfected as stated above. If other members in the family have suspicious throats, cultures are made.

CLEVELAND: Quarantine diphtheria is terminated on the finding by the city laboratory of a double negative culture.

DETROIT: Children recovered from, or exposed to, diphtheria are allowed to return to school following two consecutive negative cultures. Quarantine of diphtheria is terminated either by two consecutive negative cultures or on the certificate of the physician after eight days that the patient has clinically recovered, and that he and all members of the family have been given an immunizing dose of antitoxin. Two negative cultures are required, as aforesaid, before allowing the children to return to school. Carriers are sought by cultures when two cases appear in a schoolroom or other public place.

NEW ORLEANS: Quarantine terminates when two consecutive negative control cultures have been obtained after clinical recovery. First control only may be taken by physician in charge. Controls to be taken forty-eight hours apart. First control not to be taken until seven days elapse from notification of case by physician in charge; all subsequent controls to be taken by physician from health office. Contacts are cultured in our search for carriers.

NEW YORK CITY: Quarantine terminated by receipt of two successive negative cultures, taken not less than twenty-four hours apart. Other children in family are cultured.

NEW YORK STATE: We require the quarantine of diphtheria until two cultures taken twenty-four hours apart are reported negative for the presence of diphtheria bacilli. If these persist in the throat that is normal in appearance for five weeks, the carrier is released on condition that he be very careful about coughing and sneezing in the presence of little children; that cultures be taken at intervals of two weeks until the throat is clear and that the health officer will advise us if secondary cases ever occur. This rule has been in force since the middle of last August, and up to the present time we have not heard of secondary cases occurring. In a few special cases, we have permitted the carriers, who were schoolchildren, to return to school, and the health officer in each case reports that no secondary cases have appeared.

OMAHA: All cases kept under quarantine until two negative cultures are obtained on consecutive days.

PHILADELPHIA: At the expiration of two weeks the patient must be pronounced free of disease by the medical inspector. Two negative cultures must be obtained from throat and nose on consecutive days. In every schoolroom in which a case of diphtheria is detected, and in every case in which diphtheria develops in a home, all direct contacts are cultured. Positive cultures, without clinical evidence, are excluded from school and placed in modified quarantine until the case is cleared up. Early last fall we started with a mild epidemic of diphtheria, and we believe that these methods greatly assisted us in overcoming the threatening spread of the disease.

PITTSBURGH: Quarantine terminated by field medical inspector when two negative cultures from the nose and throat have been secured at intervals of forty-eight hours. Carriers are determined by school medical inspectors. When daily bulletin shows that there has been a clinical case of diphtheria in any particular room, the entire room is cultured. Children absent from school with sore throats are cultured before they are permitted to return.

PROVIDENCE: The minimum period of isolation in diphtheria is until two negative cultures have been obtained from the site of the disease secured at least twenty-four hours apart.

ST. LOUIS: All cases of diphtheria are terminated by the attending physician, which termination is verified by this department by the securing of two negative cultures made on succeeding days. No systematic search for carriers is made outside of institutions, hospitals and homes.

ST. PAUL: Children are excluded from school for two weeks after having been exposed.

WASHINGTON: The quarantine in cases of diphtheria is terminated on one negative culture. While one negative culture is accepted from patients treated in their own home, which culture is usually only a throat culture, the department believes that two negative cultures are better, and in the cases treated in the isolation ward of Providence Hospital and coming under the supervision of the health department, two negative cultures are required before discharging patients.

While there is nothing in the laws or regulations authorizing the health department to take cultures from persons exposed to diphtheria, an effort is made to obtain such cultures whenever the consent of the individual can be obtained. In quite a few instances "carriers" have been found and isolated in the same way as those having clinical symptoms of the disease. This department makes no distinction, for purposes of isolation, between the "carrier" and the clinical case.

QUESTION 3.—Do you require a report from the municipal laboratory or do you accept the report of any laboratory regarding the presence of diphtheria germs?

ATLANTA: State or municipal laboratory analyses are accepted. We also put up placard on clinical diagnoses but ask for culture to confirm same.

BALTIMORE: From the municipal laboratory, except when the report comes in from the physician that it is positive.

Practically speaking, physicians leave everything in our own hands.

BOSTON: All cases must be released by our own laboratory.

CHICAGO: Yes, for terminal cultures; unless the *official report* of a high-grade laboratory is submitted. Our rule is to insist on a representative of this department taking the second terminal culture.

CINCINNATI: Examination for the presence of Klebs-Loeffler bacilli are made in a municipal laboratory and in the laboratory at the hospital for infectious diseases. We are governed by the reports of these two laboratories.

CLEVELAND: Reports from municipal laboratory only are accepted regarding the presence of diphtheria germs.

DETROIT: Report from municipal laboratory on release cultures is required. Also all release cultures are taken by board of health nurses.

NEW ORLEANS: We require a report to be obtained from municipal bacteriologists in any case of diphtheria before a sanitary release of infected person or premises is effected.

NEW YORK CITY: Report from municipal laboratory required.

NEW YORK STATE: The director of our laboratory inspects and qualifies certain laboratories throughout the state whose reports on cultures can be accepted without question.

OMAHA: Require report from municipal laboratory.

PHILADELPHIA: All official acts of this bureau requiring laboratory examinations are based on the findings of the bureau laboratory. In establishing a quarantine, however, we will place a case in isolation on the findings of any laboratory, but do not begin or end a quarantine except on the bureau laboratory diagnosis.

PITTSBURGH: We require a report from the municipal laboratory.

PROVIDENCE: We accept the result of bacteriologic examination from municipal, state and hospital laboratories. I have accepted the result of private work which only very rarely is offered here, but can readily conceive that it might be necessary to make a different ruling.

ST. LOUIS: All bacteriologic reports must be from the municipal laboratory.

ST. PAUL: Regarding the termination of quarantine of diphtheria and the seeking of "carriers"; culture of exposed taken; absence of Klebs-Loeffler bacilli.

WASHINGTON: The health department prefers to examine cultures in its own laboratory and by its own bacteriologist. It will, however, accept the report from a bacteriologist of recognized standing as such.

QUESTION 4.—Do you terminate the case on one or two cultures and do you require cultures from nose or throat, or both?

ATLANTA: We terminate the case on one culture from throat.

BALTIMORE: The physician in attendance sends in one negative culture, then notifies us that a house is ready for fumigation, and then our throat inspector visits the premises and takes the culture of all persons, including the patient; thus making two negative cultures of the patient and one of each of the household. The cultures from both the nose and throat are not done in routine practice. Ordinarily we are content with the cultures taken from the throat. One of our difficulties in taking the cultures from the nose in all cases is the very large percentage of contaminated cultures, which obstruct the possible presence of the diphtheria organism.

BOSTON: See answer to Question 2.

CHICAGO: Two cultures for patient and one for all intimate contacts. Require cultures from both nose and throat.

CINCINNATI: Cases of diphtheria are dismissed from the hospital after three negative cultures, taken from both the nose and throat. Cases treated in the home are considered well after two negative cultures have been taken, as described above.

CLEVELAND: Quarantine is raised only on the finding of two cultures on successive days taken from the nose and throat of patient.

DETROIT: When the case is terminated on cultures, two consecutive negatives are required from both nose and throat.

NEW ORLEANS: Case is terminated after two negative cultures have been obtained. Where clinical indications are present, both throat and nasal cultures are taken.

NEW YORK CITY: Two cultures, nose or throat, but should require from both.

NEW YORK STATE: The code requires that the patient should not be released until two negative cultures taken at least twenty-four hours apart have been obtained. We have always ruled that it was necessary that a culture be taken from the nose and throat each time, and that the patient should not be released until on two successive days no cultures are reported positive.

OMAHA: Cultures from both nose and throat, two cultures only.

PHILADELPHIA: The patient is excluded from school at least three weeks, twenty-one days, if the symptoms have entirely disappeared and examination of the nose and throat on two successive days show no diphtheria germs; that is, negative cultures.

PITTSBURGH: In terminating diphtheria our method is as follows: The attending physician sends cultures to the municipal laboratory until such time as he may get a negative, after which our field medical inspector calls to see the patient, taking a culture of nose and throat; also, taking cultures of other members of the family until cultures prove negative. If a schoolchild, he must again be cultured, before admission to school, by the school medical inspector.

PROVIDENCE: For the release of diphtheria we require two negative cultures from throat and nose, although the state board of health rule does not call for this. I consider nose cultures of great importance.

ST. LOUIS: Two cultures from the throat in ordinary cases. The same number from both the nose and throat when there is clinically a nose involvement.

ST. PAUL: The report from our own laboratory is required.

WASHINGTON: Cases of diphtheria are ordinarly terminated on one negative culture from the throat. In cases treated in the isolation ward of Providence Hospital and over which the health department has certain jurisdiction, two negative cultures are required before a patient is discharged. Cultures are not required from nose and throat.

QUESTION 5.—What period of quarantine, if any, do you have for diphtheria cases?

ATLANTA: No period of quarantine.

BALTIMORE: No fixed period. We frequently raise quarantine in less than ten days after the report of the case.

BOSTON: Until two negative cultures have been obtained. See answer to Question 2.

CHICAGO: Until two negative cultures from nose and throat on successive days have been obtained from patient and a negative culture from the close contacts.

CINCINNATI: As stated above, quarantine for diphtheria continues for a period of fourteen days after the completion of disinfection.

CLEVELAND: First cultures for release are taken immediately on the establishment of convalescence, that is, on the disappearance of constitutional symptoms.

DETROIT: Minimum periods of quarantine for diphtheria is eight days.

NEW ORLEANS: No period. See reply to Question 2.

NEW YORK CITY: No fixed period.

NEW YORK STATE: No period of quarantine for diphtheria.

OMAHA: Until we get two negative cultures.

PHILADELPHIA: At least three weeks—twenty-one days.

PITTSBURGH: Minimum period of quarantine fourteen days, or until released by a field medical inspector after one negative culture.

PROVIDENCE: See reply to Question 2.

ST. LOUIS: On the report of a case of diphtheria, an estimated quarantine of fourteen days is set. If the patient recovers and shows two negative cultures before fourteen days have elapsed, the case is terminated, provided no other children are in the house. If there are other children, the quarantine is held for the fourteen days.

ST. PAUL: The case is terminated on two cultures, from nose and throat.

WASHINGTON: Quarantine for diphtheria is not terminated until one or more negative cultures are taken from a patient. So long as the bacilli are found present, quarantine continues.

QUESTION 6.—What is your personal opinion regarding the exclusion from school of persons who are immune by reason of recently having had either scarlet fever or measles, and who have either of these diseases in their home, the patient being practically and efficiently quarantined?

ATLANTA: Personally, I am opposed to excluding such children from school.

BALTIMORE: While admitting that there is a possibility for a person to have scarlet fever or measles the second time, yet I consider that it is so infrequent that it does not increase the likelihood of the disease being spread, and if one is absolutely sure that the child has had measles or scarlet fever (and very seldom that a health officer can be so assured) and if the health officer can be well assured that the patient is practically and efficiently quarantined, then I consider that there is no danger in allowing the well children to attend school. However, we have to deal with the public, which unfortunately is made up of such a variety of characters, and all are not trustworthy; so we find it necessary to make a rule applicable to all alike, viz., the exclusion of the children from school so long as they remain in the house where the sickness is; otherwise, discontent is produced by A being allowed to do that which we will not allow B to do.

BOSTON: Children who are protected by a previous attack of scarlet fever and measles, if other members of the family are sick with these diseases, are readmitted to school if they can satisfy this department and comply with the regulations governing the admission of children to school.

CHICAGO: Measles immunes may go to school with safety to others from premises quarantined for this disease. Scarlet fever immunes should make a change of address, if permitted to attend school.

CINCINNATI: I believe that our quarantine with reference to measles is a relic of the dark ages. We should be governed by the researches of Anderson and Goldberg. In scarlet fever, I believe we are doing the right thing in applying the quarantine to all children in the same family. If those who have had an attack or others in the same family take shelter with friends or relatives and do not develop the disease, I think that they should be permitted to return to school. They must, however, maintain their residence at the new address until quarantine in the home is discontinued.

CLEVELAND: It is my opinion that there is no occasion for excluding from school persons who are immune by reason of recently having scarlet fever or measles, and who have either of these diseases in their homes, the patient being practically and efficiently quarantined.

DETROIT: There seems very little danger of transmission of scarlet fever or measles by persons known to be immune, if such persons are promptly removed from the quarantined premises.

SYNOPSIS OF 1915 QUESTIONNAIRE *

	Can Return to Work or Can Attend School																Personal Views of Health Officials		Quarantine Period for Diphtheria	Terminal Cultures Required in Diphtheria					Carriers Sought For	Examination of Cultures Compulsory in Municipal Laboratory
	At Once				At Once; After Change of Address				After Incubation Period of Disease and Removal to New Address				When Original Case Is Discharged from Quarantine				When Original Case Is Discharged from Quarantine and After Elapse of Incubation Period										
	Scarlet Fever		Measles		Scarlet Fever		Measles		Scarlet Fever		Measles		Scarlet Fever		Measles		Scarlet Fever		Measles		Should Immune Schoolchildren Be Excluded If Quarantine Is Efficient?			Two Negative	One Negative	Nose	From Nose and Throat	Intervening Period		
	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Scarlet Fever	Measles							
Atlanta	...	...	...	...	X	X	X	X	...	...	...	...	X	X	X	X	...	...	...	...	No	No	None	...	X	...	...	0	No	Yes
Baltimore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes	Yes	None	X	...	...	...	0	No	Yes†
Boston	...	...	X	X	...	...	...	...	...	...	...	...	X‡	X‡	...	...	...	...	...	...	No	No	None	X	...	...	X	24 hrs.	Yes	Yes†
Chicago	...	...	X	X	X	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Change address	No	None	X	...	...	...	24 hrs.	Yes	No
Cincinnati	...	...	...	...	...	...	...	...	...	...	...	...	X	X	X	X	...	...	...	...	Change address	No	14 days after disinf.	X	...	...	...	0	No	Yes
Cleveland	...	...	X	X	...	...	...	...	X	X	...	...	...	...	...	...	...	...	...	...	No	No	None	X	...	...	X	24 hrs.	No	Yes*
Detroit	...	...	...	...	...	...	X	X	...	X	...	...	...	...	...	...	...	...	...	...	Change address	No	8 days	X	...	...	X	24 hrs.	Yes	Yes
New Orleans	...	...	...	...	X	X	X	X	...	...	...	...	...	...	...	...	...	...	...	...	No	No	7 days	X	...	...	...	48 hrs.	Yes	Yes
New York	...	X	...	X	X	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	No	No	None	X	...	...	X	24 hrs.	No	Yes
Omaha	...	...	X	X	X	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Change address	No	None	X	...	...	X	24 hrs.	No	Yes
Philadelphia	...	...	...	...	...	...	...	...	...	X	...	X	X	...	X	...	...	...	...	...	Change address	Change address	21 days	X	...	...	X	24 hrs.	Yes	Yes
Pittsburgh	...	...	...	...	...	...	...	...	X§	30 days	X§	21 days	...	...	...	...	...	...	...	...	Yes; provisionally	Yes; provisionally	14 days	X	...	...	X	48 hrs.	Yes	Yes
Providence	...	...	...	...	...	...	...	...	X	X	X	X	...	...	...	...	...	...	...	...	No opinion	No opinion	None	X	...	...	X	24 hrs.	N A‖	No
St. Louis	...	...	...	...	X	X	X	X	...	...	...	...	...	...	...	...	...	...	...	...	No	Yes	14 days	X	...	...	...	24 hrs.	No	Yes
St. Paul	...	...	...	...	...	X	...	X	...	...	...	...	X	...	X	...	...	...	...	...	Change address	Change address	None	X	...	...	X	0	Yes	Yes
Washington	...	...	X	X	X	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Change address	No	None	...	X	...	...	0	Yes	No

* Procedure in different cities regarding persons exposed to scarlet fever and measles and who are immune by reason of having had either disease and who (*a*) are engaged in handling dairy or food products, or (*b*) attend school.
§ Grocer, work after eight days. ‡ Dairymen. † In part only. ‖ No answer.

Remarks.—You will doubtless notice that our method of terminating diphtheria quarantine is different from that usually practiced except in the case of schoolchildren. The alternative procedure, that of releasing all but schoolchildren after eight days on the certificate of clinical recovery and immunizing doses to all members of the family, was instituted Nov. 21, 1913, and is based on the theory that the number of carriers is so large as to make their sanitary control difficult or impossible. During the year 1913 about 280 deaths from diphtheria occurred in Detroit. During 1914, following the installation of this system, 157 deaths occurred. It must not be thought, however, that the reduction is entirely, or even in large part, due to the change in this system. Other factors were largely responsible.

New Orleans: Were I assured that effective quarantine was observed, I would unhesitatingly advocate the nonexclusion of such persons.

New York City: They should not be excluded.

New York State: We feel that well schoolchildren immune to scarlet fever should be excluded from school for one week if the disease exists in the home. During the patient's illness, the well schoolchildren should live with adult friends. After one week if still well, they may return to school but must continue to live with the adult friends until the patient has recovered. In regard to measles, we feel that immune schoolchildren in the household where a case exists need not be excluded from school at all.

Omaha: Those with scarlet fever should be excluded from school but not measles. Do not think it safe for a child to attend school from a house where scarlet fever is quarantined, no matter how carefully the case is isolated.

Philadelphia: We believe that many of the administrative difficulties that are encountered by health officers arise from the severe requirements imposed by existing laws on immunes. We are meeting increased resistance in this matter, due to exclusions from school, and believe that our procedure should always be in accord with the best medical information extant. That information certainly does not approve of the exclusion of immunes who come from houses efficiently quarantined. There are always practical considerations, however, which arise in each case, and we believe the best procedure for the present is for the immune to remove to premises free from disease.

Pittsburgh: That child should be permitted in scarlet fever and measles to return to school after all discharges have ceased.

Providence: I have no settled opinion as regards the admission to school of children from scarlet fever and measles families who themselves have previously had the disease. I think the danger of their carrying the disease is extremely small and we do not let children who have had measles go to school. I am experimenting with this disease because I doubt whether anything we can do really has very much effect on the prevalence of the disease. In regard to scarlet fever, I do not think there is any theoretical reason why children who have had the disease might not attend school, but I can see some administrative difficulties in determining whether they really have had it. I had such an instance yesterday in a family where the initial case had been removed to the hospital.

St. Louis: I consider it necessary to exclude any child from school who is attending school from a house in which scarlet fever exists. I consider that it is safe to allow a child to attend school from a house in which measles exists. In event the scarlet fever exposed person changes residence, a ten days' daily inspection is necessary. Fourteen days' daily inspection is necessary in the child exposed to measles.

St. Paul: The period of quarantine for diphtheria cases is limited by bacteriologic findings. Schoolchildren may be removed from quarantined houses after proper precautions and sent to school. We, however, exclude for ten days according to state law.

Washington: I am of the opinion, from past experience, that little if any good has been accomplished by this department in attempting to prevent the spread of measles among schoolchildren, it being believed that the infection has already been communicated to other persons before the patient is known to be sick. A great loss of time from school studies was experienced by children exposed to measles, and on this account and the fact that such exclusion has in the past accomplished practically nothing, this department, about two years ago, permitted children who have had measles to continue in attendance at school, notwithstanding the fact that a case of measles was in the same house at the time. I doubt the wisdom of permitting schoolchildren from homes where scarlet fever exists to continue in attendance at school, even though they have previously had the disease, and this department does not permit this to be done. If it were possible to know with a reasonable degree of certainty that a patient suffering from scarlet fever was thoroughly isolated in every respect and those persons residing in the same premises exercised all precautions, it might be safe to allow children residing in such a home, and who have previously had scarlet fever, to continue at school; but as this department has no means of acquainting itself with what takes place in the private home of patients, and in order to safeguard to the fullest extent possible pupils in schools, no child living in a house where scarlet fever exists is permitted to attend school so long as they reside in the premises.

FORMER AND PRESENT PROCEDURES

The following parallel of former and present procedures is given in order to contrast and demonstrate concisely the method now in vogue in New York City. This method is felt to be both safe and consistent with accepted scientific knowledge and at the same time to avoid any unnecessary loss of school or working time.

MEASLES

Former Procedure	Present Procedure
All pupils in family excluded from school.	If case is satisfactorily isolated, immunes may return at once to school. Nonimmunes, on change of residence, may return to school fourteen days after last exposure. If isolation is not satisfactory, immune pupils, on change of residence, may return at once to school. Nonimmunes, on change of residence, may return to school fourteen days after last exposure.
Minimum isolation period, fourteen days.	Quarantine terminated five days after appearance of rash, provided all catarrhal symptoms have ceased and fever and rash have disappeared (not pigmentation).
Disinfection by fumigation.	Fumigation omitted. Disinfection by cleaning.
All cases kept under observation by irregular visits.	Cases divided into two classes: "observation," visited but once and terminated by family physician, and "supervision," closely supervised by field nurse.
All cases have homes placarded.	Placards posted in "supervision" cases only.

SCARLET FEVER

Former Procedure	Present Procedure
All pupils in family excluded from school.	If case is satisfactorily isolated, immunes may return at once to school. Nonimmunes, on change of residence, may return to school five days after last exposure. If isolation is not satisfactory, immune pupils, on change of residence, may return at once to school. Nonimmunes on change of residence may return to school five days after last exposure.

SCARLET FEVER—CONTINUED

Former Procedure	Present Procedure
Minimum isolation period, thirty-five days.	Thirty days.
Desquamation must be complete.	Not insisted on.
Use of elevator permitted only on entering apartment.	No elevator restrictions.
Disinfection by fumigation.	Fumigation omitted. Disinfection by cleaning or, when necessary, by repapering and repainting at expense of owner. Disinfection of all discharges and soiled materials and articles throughout progress of case.
No renovation placard.	Renovation placard posted until cleaning is performed.
Persons selling milk discontinue work or change residence.	All food handlers stop work or change residence.

DIPHTHERIA

Former Procedure	Present Procedure
All pupils in family excluded from school.	If case is satisfactorily isolated, pupils (and teachers) who have been immunized, and on whom "trial" cultures with negative result have been made, may return at once to school. If isolation is not satisfactory, pupils (and teachers) who have been immunized, and in whose cases "trial" cultures with negative result have been made, on change of residence may return at once to school. If not immunized, they can return to school only after lapse of seven days' interval and a change of residence and a "trial" culture with negative result.
Terminated on one negative culture.	Two negative cultures, taken at an interval of not less than twenty-four hours, preferably from both nose and throat.
Disinfection by fumigation.	Fumigation omitted. Disinfection by cleaning or when necessary by repapering and repainting at expense of owner. Disinfection of all discharges and soiled materials and articles throughout progress of case.
Persons selling milk discontinue work or change residence.	All food handlers stop work or change residence. If case is isolated satisfactorily, trial cultures negative and immunization performed, they may return at once to work.
Renovation placard not used.	Renovation placard posted until cleaning is performed.

It is, indeed, a pleasure to state that this questionnaire was promptly and most satisfactorily answered by all.

The opinions expressed by the different sanitarians endorsed the new procedures. While the experience in New York City has not covered a sufficient length of time to be conclusive, it has, however, been very extensive and so far has given general satisfaction.

Attention, however, might be called to the ultra-conservatism of some of the municipalities; the minimum isolation period for diphtheria in Detroit is established at eight days; in St. Louis at 14 days; in Philadelphia "at least three weeks"; and in Cincinnati the quarantine period continues for 14 days after termination of case and completion of disinfection.

Some cities accept reports of diphtheria without laboratory confirmation; definite periods of quarantine are set in several of the cities, whereas the presence or absence of diphtheria bacilli should be the determining factor, it is thought.

The methods of handling "contacts" and "persons exposed," as well as the seeking and handling of "carriers" varies widely.

In Pittsburgh, schoolchildren exposed to scarlet fever are excluded for thirty days, and a minimum period of quarantine of sixty days is established for the patient.

A synopsis of the variations is very interesting from this comparative point of view.

In the establishment of quarantine, the object is to keep the patient "in" and the public "out," without the imposition of unnecessary restraint. At no time must it be considered in the nature of a blockade.

In public health work no one plan will apply everywhere, and in no single method does success lie. Fear and superstition for ages held masterful sway in the control of the infectious diseases, but today we are ruled and guided by the light of knowledge, and the laboratory should be the determining arbiter of both custom and practice.

Sickness, by its mere presence, greatly disturbs and is an added expense to the home; when this sickness, in addition, brings to the home municipal control, it is not welcomed, as a rule, because the family feel that the numerous restrictions are not only burdensome but also unnecessary, and in this opinion they are not infrequently upheld by their family physician.

While no one knows the best, safest and most economical method of prevention and control of infectious diseases, it is appreciated that the most desirable system will be that which is most free from unnecessary restrictions and at the same time is consistent with demonstrated methods and scientific knowledge.

Mattress Sale Control.—Labor Commissioner John Price Jackson of Pennsylvania during October, 1915, issued instructions to inspectors to enforce rigidly in factories, cleaning establishments, wholesale and retail stores, the provisions of the acts of legislature that place under the jurisdiction of the department of labor and industry the manufacture and renovation, sale or resale of all mattresses. The sweeping character of the mattress act of 1913 and the enlargement of its scope by an amendment passed by the last legislature virtually prohibits the sale of any mattress that is not manufactured of approved material, thoroughly sterilized and disinfected and properly labeled. A resale of a mattress that has been used by a person having any infectious or contagious disease is forbidden and a resale of any mattress that has not been sterilized or disinfected is unlawful. The law declares a mattress to be any quilted pad, mattress, mattress pad, bunk quilt or cushion stuffed or filled with wool, hair or other soft material, except feathers, to be used on a couch or other bed for sleeping or reclining purposes, and further declares that no material may be used in the manufacture of a mattress if it has been obtained from any other mattress used by a person suffering from a transmissible disease. Scraps of old or worn clothing, carpets or other fabric of material known as "shoddy" are prohibited.

BLOOD CRYOSCOPY AND BLOOD UREA

A COMPARATIVE STUDY OF RENAL FUNCTION *

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Determination of renal function, as a routine preoperative measure, is undoubtedly responsible for the marvelous advance of renal surgery during the last two decades. By this means (in order to mention only two salient points) the recognition and operative treatment of incipient renal lesions, and nephrectomy in the presence of a diseased second kidney became well established and comparatively safe procedures. Owing, furthermore, to the important rôle played by the kidneys in systemic metabolism, the value of functional methods of examination as widening and intensifying the diagnostic and prognostic aspect of kidney affections became generally recognized. The diagnosis, finally, of degenerative lesions of the kidneys due to chronic urinary stasis, particularly in connection with prostatic hypertrophy, is only feasible on the basis of a careful study of renal function, which justly is considered the most important factor in the rapid reduction of the mortality rate of prostatectomy.

While thus determination of renal function now occupies an important place among clinical methods of investigation, there exists, nevertheless, a marked divergence of opinion with regard to the accuracy and diagnostic value of the various tests which, of late, have been devised in rapid succession.

CRITERIA FOR PRACTICAL VALUE OF TESTS

The main object in determining total renal function, so far as the surgeon is concerned, lies in the satisfactory answer to the cardinal questions: Does renal insufficiency exist preoperatively? If so, is it reparable? Is renal insufficiency likely to occur postoperatively? Information on these most important issues is sought by means of the various functional tests at our command, by measuring the quantity of substances which are either eliminated by the kidneys with the urine (tests of renal excretion), or which are retained in the blood as end-products of metabolism (tests of renal retention). Total renal secretory activity is measured either by determining the quantity of substances normally contained in urine (urea, diastase, etc.), or by introducing extraneous substances into the circulation (dyes, phloridzin), while renal retention of end-products of metabolism is determined by physiochemical tests (blood cryoscopy, blood urea, etc.).

No single test so far has been devised which fulfils all requirements, and only a few of the many tests recommended for clinical use are practically at the disposal of the surgeon.

A functional test, in order to become available for clinical purposes, must give quick and uniformly reliable results by a technic not so cumbersome, difficult or time consuming as to be prohibitive to the busy clinician.

SIGNIFICANCE OF TESTS

Viewed from this standpoint, almost all of the tests, based on excretion of substances normally contained in urine, have to be rejected, since the quantity of renal secretory activity is not determinable by the elimination of a single salt or enzyme, but by the excretion of substances which, being of intrinsic importance for metabolism, express the total sum of renal capacity. Thus, quantitative estimations of the twenty-four-hour urea output, carried out for a series of days under hospital regimen, may give an approximate idea of total renal function, and are, for a certain class of cases, like prostatics with retention catheter, of practical value. The amylase tests, on the other hand, dealing with a single ferment, must for the same reason be considered as of little practical value, a view which is substantiated by Rowntree and his collaborators,[1] who, on the basis of their comparative study with other tests, conclude that determination of diastatic activity often yields contradictory and unreliable results.

The use, for functional purposes, of extraneous substances which physiologically are not present in the circulation is subject to the same criticism. By this means, renal functional capacity is estimated by the ability of the kidneys to excrete a single dye or glucosid. Renal excretory capacity, though, is variable according to the substance by which it is tested, or, in other words, the kidneys work selectively and eliminate one substance better than the other. Thus it appears obvious that satisfactory permeability toward one dye cannot be considered as a uniformly correct index of the total sum of renal capacity. This fact alone should, in spite of the obvious practical advantages of the phthalein two-hour bladder test (ease of application, rapidity of elimination, quantitative colorimetric estimation of excreted dye), militate against the widespread acceptance of that test as the only means for determining total renal function.

More rational, therefore, because representing a general expression of total renal activity, are tests of retention, based on the quantitative determination of components of urine retained in the blood. Of this class of tests determination of the freezing point of blood (cryoscopy) appears to be the most comprehensive and, therefore, the most important method, since total secretory renal capacity is measured by determining the degree of retention due to renal insufficiency. This test has given us uniformly safe and reliable results substantiating the conclusions of our former publication on this subject.[2]

BLOOD CRYOSCOPY

Our technic for blood cryoscopy has remained practically unchanged. Through long practice we are enabled to keep the mixture of ice and salt at such concentration, as to insure a constant temperature of about —4 C. (24.8 F.) during the entire course of the test. Aspiration of the patient's blood with needle and pipet was lately adopted, as facilitating and shortening the time of blood taking. The average length of time of actual determination for water or blood is, at present, reduced to about fifteen minutes for either test. Bartley's[3] modification of cryoscopic technic, which we fully tested, was abandoned as neither

* Read before the Section on Genito-Urinary Diseases at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

1. Rowntree, L. G.; Marshall, E. K., Jr., and Baetjer, W. A.: Further Studies of Renal Function in Renal, Cardiorenal and Cardiac Diseases, Arch. Int. Med., April, 1915, p. 543.
2. Krotoszyner, Martin, and Hartman, G. W.: Practical Value of Blood-Cryoscopy for the Determination of Renal Function, THE JOURNAL A. M. A., Jan. 18, 1913, p. 188.
3. Bartley: Arch. Diagnosis, July, 1913.

simpler nor more time-saving than determination with the ordinary Beckmann apparatus.

Since our last report 106 cryoscopic tests were made on 81 patients.

Of 66 patients with normal blood points, ascertained through 77 cryoscopies, 23 were operated on without death. The average point of these 23 patients was 0.557.

In 12 cases of incipient unilateral or bilateral kidney lesions of indefinite character (chronic nephritis, hydronephrosis, hematuria, etc.), an average point of 0.553 was ascertained.

The average point of 12 cryoscopies, done on 8 patients, with recovery following prostatectomy, was 0.561.

Of 15 fatal cases, 10 nonoperative deaths showed an average blood point of 0.62, while the average blood point of 7 cryoscopies, done on 5 operative cases, was 0.581. The average freezing point of the 31 cryoscopies, made on this class of cases, was 0.604; in 18 instances the point was above 0.58 and in 21 above 0.57.

Particularly important is the prognostic value of repeated cryoscopic examinations in functionally doubtful cases, which is best illustrated by two observations from our case records:

A man of 53 with the clinical diagnosis of prostatic cancer showed, on admission to the hospital, a blood point of 0.585, which, under bladder drainage, gradually went down[4] to 0.553. Suprapubic prostatectomy was followed by satisfactory recovery without recurrence within one year and two months.

In a man of 65 with the same clinical diagnosis the blood point increased from 0.574 to 0.580. Death occurred five days after prostatectomy with symptoms of renal insufficiency.

In 13 determinations of 9 cases of chronic nephritis during the stage of cardiorenal compensation, normal freezing points with an average point of 0.564 were obtained. Characteristic, too, for this class of cases is the prognostic value of the method, which is best evidenced by the recital of the following observation:

A nephritic of 60 entered the hospital with severe cardiac asthma, general anasarca, etc. His blood point of 0.573 fell under appropriate hospital regimen and with symptomatic improvement to 0.567; at the onset of uremic symptoms a point of 0.592 was ascertained, which rapidly rose to 0.620 prior to death in uremic coma.

All cases of nephritis, in which uremic symptoms were manifest, showed points gradually approaching 0.60 and above. The 5 patients in whom the blood point went above 0.60 died. In uremic coma followed by death very high points up to 0.70 were obtained. In two cases of deep uremic coma, tested shortly before death, the unusually high points of 0.790 and 0.826, respectively, were ascertained.

With our added experience we can simply reiterate the statement made three years ago that blood cryoscopy, if performed with faultless technic and interpreted by a critical observer, is a valuable test for estimation of total renal function.

BLOOD UREA

While quantitative determination of urea in blood was done systematically and with scientific accuracy by Strauss and others, methods used for that purpose were by far too complicated and technically difficult as to become available for clinical purposes. A few years ago Denis and Folin[5] introduced a simplified method; the test, though, assumed practical importance only through a new procedure as devised by E. K. Marshall, Jr.,[6] who utilizes the diastatic properties of urease, the enzyme of the soy bean, for the conversion of urea into ammonium carbonate, and finally into ammonia, which then is titrated against fiftieth normal hydrochloric acid.

In our determinations of blood urea we followed substantially Marshall's method. The technic of the test is comparatively simple, its greatest difficulty being the determination of the end-point of titration, in which accuracy is readily acquired with practice and experience. The normal content of blood urea, according to several authorities (Widal, Folin, Geraghty and others), varies between 100 and 500 mg. per liter, its upper limit being 500 mg.; values above that are considered to be indicative of urea retention, due to renal insufficiency.

We have made 43 blood urea determinations on 33 patients. In order to establish a standard of normal values we started our work by examining a number of normal patients, without any anatomic or functional renal involvement. Twelve such cases were tested and determinations were repeated in a number of these for purposes of control.

The values of all determinations for this class of cases ranged between 120 and 468, with an average of 236, thus demonstrating uniformly normal points.

In 5 cases of chronic nephritis without uremic symptoms, normal values, or an average point of 242, were obtained, while in 5 cases of uremic coma with death, abnormal points (542, 757, 936, 950 and 1,116), with an average of 860, were found.

In 6 cases of prostatic hypertrophy with residual urine, five of which were successfully prostatectomized, normal points with an average of 311 were ascertained. A prostatic with severe retention and marked urosepsis, who, on account of poor cryoscopic and phthalein values, was assigned to the interval operation, and who died shortly after preliminary suprapubic cystostomy, done under local anesthesia, showed, on two determinations, points of 486 and 301, respectively. A patient with prostatic cancer, who died from renal insufficiency, a few days after partial prostatectomy, demonstrated points of 168 and 420.

Five patients with unilateral or bilateral surgical kidney, one of whom died, showed normal values with an average of 231. In one of these cases, in which the necropsy revealed a bilateral pyelonephritis, values of 144 and 312 were obtained. In another patient with bilateral hematogenous kidney infection (colon), who entered the hospital with marked uremic symptoms (nausea, vomiting, drowsiness, etc.), and who rapidly improved under eliminative treatment, points of 396 and 226 were ascertained.

A patient with mercuric chlorid poisoning, with final recovery, showed a point of 214.

Our results with the blood-urea test practically coincide with those of other observers (Geraghty, Hinman) demonstrating values of about 500 mg. and below, in cases with normal renal function, and

4. For simplicity the lowering of freezing points below normal is designated as "rise" and vice versa.

5. Denis and Folin: Jour. Biol. Chem., 1912, xi.
6. Marshall, E. K., Jr.: Jour. Biol. Chem., 1913, xv.

higher points, up to 1,000 mg. and above, in cases of renal insufficiency.

CRITICAL COMPARISON OF BOTH TESTS

A comparative study of the clinical importance of blood urea and blood cryoscopy must necessarily be based on the consideration of the significance of the two tests. Blood urea estimates renal function by quantitative determination of retention in the blood of a single, though admittedly, the most important constituent of urine; in renal insufficiency the test indicates pathologic accumulation of end-products of nitrogen metabolism, and, therefore, does not so much register the degree, course and variability, as merely the final stage of disturbed function. Blood cryoscopy, on the other hand, does not depend on retention of a single urinary constituent, but on the total sum of retained molecules; or, in other words, it measures renal secretory activity in its totality. On account of the narrow margin of freezing points between normal and pathologic values, the rise or fall of renal functional capacity can be followed by repeated cryoscopy, and the test assumes, by this means, a prognostic significance which is of the utmost importance for surgical purposes, since on its findings indications for rational therapeutic measures may be based. Blood urea, on the other hand, because simply demonstrating abnormalities of renal metabolism, to which the organism has been subjected in the past, and on account of its very broad range for normal values, is a less delicate index of variations in renal activity, and, therefore, lacks in prognostic finesse.

Thus, in a patient with prostatic cancer, who died a few days after prostatectomy, freezing points gradually rising to 0.580 were found, while the corresponding blood urea points ranged between the normal figures of 165 and 420. In a comparative study of a fatal case, of similar type, in which gradual deterioration of renal function was ascertained by freezing points rising from 0.540 to 0.611, the corresponding blood urea points varied between 288 and 542, values which are considered to lie still within normal limits.

In contrast to these findings, five patients with chronic nephritis, with death in uremic coma, showed for both tests high or pathologic points, thus giving parallel results.

The greatest objection which has been made to blood cryoscopy is the limited range of normal freezing points, which lie within 0.02 of 1 degree C., and on account of which the slightest inaccuracy in technic may vitiate the result. While this objection does not obtain with blood urea, because of its very broad range up to 550 mg., the drawbacks of the test, as pointed out above, are not offset by the technical difficulty of cryoscopy. After a long practical experience with blood cryoscopy we must admit that its technic is exceedingly delicate, and that correct determination of the end-point is only feasible after long and continuous practice; since differences exceeding 0.005 of 1 degree C. may considerably change interpretation of end-results. During the course of the test a great many precautions must be continuously observed in the handling of the apparatus, thorough skill in which can only be acquired by constant application of an intelligent operator with laboratory training. Everything in the performance of the test, therefore, depends on attention to detail, which, if neglected in the slightest, may entirely upset the end-result. As soon, though, as these technical difficulties have been mastered, the results assume a surprisingly uniform aspect and the test becomes, in experienced hands, a finer and more exact index of renal function than any other method of determination of total renal function. In determination of blood urea, on the other hand, the technic is rather gross and is easily learned and mastered, so that the average intern, after some experience, may obtain reliable results. We can, nevertheless, only partly agree with Hinman's[7] statement, which designates blood urea as the simplest, most definite and most practical of tests of retention. It is certainly simpler, and therefore possibly more practical, but not more definite than cryoscopy, the technic of which is not so difficult as not to be within reach of every surgical assistant.

The tests supplement each other, and a parallelism in the results of both intensifies the significance of findings. We would, therefore, recommend, for doubtful cases, the performance of both tests as a routine measure.

CONCLUSIONS

1. Blood cryoscopy and blood urea run parallel in cases with normal renal function.
2. In renal insufficiency pathologic or high points are obtained with both tests.
3. The limited range between normal and pathologic points, while rendering technic of cryoscopy more difficult, increases its delicacy and prognostic significance.
4. Blood urea, while technically simpler, is, on account of the broad range of its normal and pathologic values, prognostically less precise.
5. Simultaneous application of both tests intensifies, in doubtful cases, the significance of findings.

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ABSTRACT OF DISCUSSION

DR. ARTHUR B. CECIL, Los Angeles: I do not feel that a comparison can be drawn between the relative values of cryoscopy and blood-urea and methods of determining kidney efficiency by various dyestuffs. These methods are not opposed to each other. It is well understood that the kidneys have a great reserve power, and as long as that reserve power is not being exceeded, the patient will not clinically give signs of retention of products in the blood. A comparison might be made with a patient suffering with a valvular lesion of the heart. As long as he is at rest he seems perfectly well and does not show signs of broken compensation, but added strain exceeds the heart capacity for work. Now in the cases of the kidney, so long as they are not being overworked, cryoscopy and blood-urea will be normal, but if their efficiency is exceeded by a sudden strain there will be retention of the products in the blood. I think the only logical thing is, in the first place, to determine by cryoscopy or blood urea, as to whether the patient has exceeded his kidney efficiency, but in the absence of retention it does not mean that a patient is a good surgical risk, for he may not have the ability to take on extra work forced on him by operation. We must, therefore, determine how much the kidneys are worth from the reserve standpoint, and this is admirably determined by phenolsulphonephthalein. The kidney efficiency may be greatly reduced and the patient may appear quite well, but with the added strain of operation his kidneys are unable to take on their added work. In other words, he has broken compensation of the kidneys.

DR. WILLIAM E. STEVENS, San Francisco: I think one of the most important lessons that the paper of Dr. Krotoszy-

7. Hinman: Surg., Gynec. and Obst., 1914, xix, 482.

ner and Dr. Hartman teaches us is the necessity of combining the tests of retention with those of excretion. There seems to be a tendency among many at present to be careless in this respect. They place their dependence on the phthalein test, which, as we all know, is most popular in this country at the present time, and they think that by this test we can learn everything there is to know about kidney function; whereas, it fails many times to teach us anything. I have recently seen several cases in which the total phthalein output was 15 to 20 per cent., in one case even as low as 10 per cent. in two hours, and many patients in cases of that kind are denied the benefit of a prostatectomy when it is badly needed. The foregoing patient was operated on and recovered without complications of any kind in the usual length of time. If tests of retention had been made in these cases, without any doubt we would have found them normal. I agree with Dr. Krotoszyner and Dr. Hartman that we should combine the tests in every case.

DR. EDGAR G. BALLENGER, Atlanta, Ga.: There are several factors apart from the technic of making these tests that are important for us to bear in mind. The quantity of water that a patient has been drinking before we make the test is one, and the amount of protein he has been consuming for the past few days is another. He may have dammed back much material that could have been disposed of by diuretics and purgation. We should consider whether or not he has been on a restricted diet, or whether he has had a fever that has burned up the material very rapidly.

DR. FRANK HINMAN, San Francisco: I think this contribution of Dr. Krotoszyner and Dr. Hartman is a most valuable one. It is the first detailed comparative study, so far as I know, of cryoscopy and blood-urea.

Dr. Krotoszyner took an exception to a statement that I have made that blood-urea was the simplest and most valuable test of retention. I think from his study I will have to modify that statement and not say it is the most valuable. I think, however, that there is a distinction between the two tests in this way: cryoscopy undoubtedly will give a more definite prognosis, but cryoscopy will not give the information that blood-urea will give in regard to the form of retention.

The forms of retention are of three kinds, namely, nitrogen retention, retention of acids and retention of chlorids. In the examination of the blood the estimation of retention of nitrogen is most important but, at the time of the blood-urea determination the acids can also be estimated. A cryoscopy examination alone will not tell which form of retention is present, whether it is a retention of nitrogen, a retention of chlorids, or of acids; and knowledge as to what form of retention is present is most important in the treatment of cases. Prognosis is better established by clinical studies than by functional studies anyway, although the two should be used in conjunction. I think, however, that Dr. Krotoszyner's conclusion is probably just that cryoscopy is a much better test than blood urea from a prognostic standpoint.

DR. GEORGE W. HARTMAN, San Francisco: Of course there is no one test that will anticipate what is going to happen in case of possible shock. It would seem after following this work closely that if there is any possibility of prognosticating ordinary cases, cryoscopy does that to the best advantage.

There have been cases suggested in the paper, and also mentioned by Dr. Stevens, in which the phthalein output was very low; others in which, on a standardized diet, urea was forbiddingly low. Had we relied on either of these tests alone we certainly should not have operated. In the presence of normal cryoscopies we proceeded and the patients did very well. The application of cryoscopy seems to be best in those old cases in which one might expect to have bad renal function—I mean old prostatics. In almost all of those patients the results have been unerring. In only one operative case in the last five years in which the cryoscopy was minus 0.58, or below, did the patient die. There is an unerring accuracy in cryoscopy. The normal values usually fall within certain limits, and we have made determinations on cases known to be normal time and again, the results always agreeing. It is surprising how one can do cryoscopies on the same patient at intervals of a week and find that the result will come within three one-thousandths of one degree.

In regard to the technic, if one does not get satisfactory results after one or two attempts one should not abandon it. It is a delicate test, because it deals with a thermometer that registers thousandths of a degree. In the course of time one acquires requisite ability. It requires nothing but practice.

I resent gently any suggestion that an attempt was being made to shove the diagnosis of these cases on to the laboratory. I am not a laboratory man primarily, by any means. I think our cases are studied as carefully clinically as they are ever studied from a laboratory standpoint. We make our diagnosis before we attempt this work. I think if you want to draw an age line, you might say that it is not necessary to do blood cryoscopy in patients under 50 years. When you get an individual past 50 it is extremely valuable, especially as regards prognosis. Some patients come in, especially old prostatics, who deserve to be operated on, and I am quite sure that if they were operated merely on a clinical diagnosis, they would not do well. We have put them to bed, put them in good shape, and then they have been operated on and recovered.

DR. W. F. BRAASCH, Rochester, Minn.: It is with some hesitation that I speak on this subject, because I have not had much experience with cryoscopy. I have had some experience with blood-urea in the estimation of renal function, and also with phthalein. Our experience on the whole has not been in keeping with the trend of recent literature concerning the value of functional tests. So far as an aid to prognosis is concerned, after all is said and done, clinical judgment and experience, based on surgically fundamental principles, is the best guide as to whether or not to operate. There is no laboratory functional test of the kidney which will tell whether or not to operate in the face of clinical symptoms. That we have been correct in our principles has been proved by the comparative operative results in a large series of cases. That does not mean that we pay no attention to the renal functional capacity. We do so, however, by clinical means. It is generally recognized that in the presence of residual urine prostatectomy should not be done without preliminary drainage of the bladder. Immediately following drainage the patient loses in weight and strength and there will be an abundance of clinical evidence to show that the patient is undergoing a period of renal insufficiency. The percentage of phthalein output will decrease and that of the retention tests will increase. This evidence, however, will seldom be present without the more apparent clinical evidence, and is unnecessary. When the patient overcomes the stage of functional depression, his weight and strength return, his appetite improves and it is usually quite apparent that his general condition will warrant operation. Whether or not the phthalein test remains low, or whether the urea test remains high, would not contraindicate an operation. While we should not disregard these various tests entirely, clinical experience has shown that they are only of secondary value in molding our clinical and surgical judgment.

DR. FRED R. CHARLTON, Indianapolis: I am moved by Dr. Braasch's remarks. Some years ago one of our best authorities on urinalysis laid great stress on epithelium coming from the ascending loop of Henle or the descending loop of Henle and endless discussion grew out of such studies. As a matter of present day fact it did not make one bit of difference which loop of Henle the debris came from. It was in a way a scientific study, but it had no value prognostically and little otherwise even if the claims of differentiation had been true, which they probably were not. About that time Dr. Richard Cabot, of Boston, came out with the statement that he would rather depend on the total amount of urine passed in twenty-four hours, plus its gross appearance, and its chemical reaction, than on all the fine spun urinalyses that were being made. That publication

came to many as quite a shock, but none the less I know that it did me a great deal of good, and I believe that it brought us back to a normal appreciation of what our business has to do with. I could not go into a physical laboratory and carry on the many studies that are now being carried on with great credit, and it is not my idea to take away one word of credit from the men who are doing this sort of work. However, it is a very easy thing to hold a nickel in front of your eye and blot out the sun. You are so wrought up with your enthusiasm that you forget everything else. I took up the kidney functional test somewhat tardily, after others had already published their series of cases. Since then it has seemed to me that in so far as the phthalein test was concerned, it prognostically made very little difference, and those with low phthalein that I operated on, because they seemed otherwise suitable cases and because they needed it, went on and recovered regardless of the phthalein findings. I have had two cases with a high phthalein output, one with forty-five and one with fifty, and they both died from an unassignable cause, other than renal insufficiency. While I believe that these pure laboratory studies are of tremendous value and that the men who are doing them should receive our heartiest appreciation, I do not believe I would hesitate because of a low phthalein output to operate where my clinical judgment said it was necessary. We have no right to disregard all our earlier clinical values whenever the latest laboratory claim is set up.

Dr. Louis E. Schmidt, Chicago: I would like to say that I agree with every word said by the two previous speakers, particularly Dr. Braasch, who went into details scarcely necessary for me to repeat; but there is no question that all of these methods of examination are completely secondary. I do not believe there is any general or genito-urinary surgeon who will refuse to operate on a patient if any one of these methods of examination should not bear out one or another theory.

In regard to cryoscopy, it is simply a routine method of examination. It is certainly fascinating, equally so as the phthalein test. I hardly think a day passes that I do not do more than one. The reason I mention that is this: it is not a method involving any great amount of work. I think it is a method that can be carried out just as quickly and as easily as any other. If anyone is interested in keeping up with work of this kind I think it is well worth while to make as many of these tests as possible, because in the future certain conclusions may be derived from these various findings.

Dr. A. J. Crowell, Charlotte, N. C.: The discussion brings out a fact that I tried to emphasize in my paper, that every available means at our command should be used in arriving at a diagnosis and ascertaining the best surgical procedure to pursue, and when to operate, but we must not depend on any one of them. I, like Dr. Braasch, think we should throw great stress on the clinical symptoms, yet I do not believe that any one of the means or aids at our command should be excluded in arriving, not only at our diagnosis, but in assisting us in deciding when to operate and what to do.

Dr. Granville MacGowan, Los Angeles: The condition of men who require prostatectomy, and the condition of the many people who have obstructive lesions in the anterior or posterior urethra, are very lamentable. It requires often a great deal of judgment to care for and preserve their lives. They will all die if you do not operate on them and many of them will die if you do, or do too much at one time. Much of your judgment must depend necessarily on the results of investigations which you make of the ability of the kidneys to keep the man alive. All people with chronic obstruction of the posterior urethra are already poisoned. They are to a certain extent immune to their infective organisms, but they are not immune to an extra accumulation of urea in the blood.

A surgeon who sees further than the local conditions will learn much of value in the formation of his judgment. If one simply tests the kidneys to find out how large a percentage of phthalein or of indigocarmin will pass through in a certain time, and bases operative interference on that alone, he will be chagrined to lose some patients in whom the output of phthalein is high, and, on the contrary, he will be astonished sometimes where there is a low output of phthalein to see an undisturbed convalescence. If the patient is drained preliminarily and the color tests applied, then the blood-urea tests, and if the surgeon possesses the technical skill, cryoscopy, material is gathered which when added to one's clinical knowledge and experience of general diseases, enables one to determine exactly what the clinical status of the individual is. Thus and thus only the operator will do the best for himself and also do the best for his patient, for he has neglected nothing bearing on the case, thereby becoming a successful operator, and the patient will recover from the troubles for which he seeks operation.

Probably the wisest genito-urinary specialist who ever lived was Albaran. In perfecting his judgment as to operative interference he depended almost entirely on the ability of the kidneys to secrete water under force, and on the output of urea in the urine under such forced output. This is something that you must not overlook. Practically we depend on the water output, on the estimation of urea in the urine, on the ability of the kidneys to put out phthalein and on the clinical appearance of the patient. I regard them all as necessary, and I look with favor on the usefulness of cryoscopy.

Dr. Martin Krotoszyner, San Francisco: I beg to take exception to Dr. Hinman's statement, that he considers blood-urea estimation preferable to cryoscopy as a guide to rational treatment. From my experience with blood-urea, although it is not as extensive as that with cryoscopy, I am, on the contrary, fairly well convinced of its superiority for therapeutic purposes. I agree with Dr. Stevens that too much stress is laid, especially in this country, on the exclusive use of phthalein, and also with Dr. Braasch, who warns against overestimating the evidence furnished by any or all laboratory tests. It is, for instance, a fact that by the exclusive use of the phthalein test, as it is at present done dogmatically in every clinical case of surgical kidney, some cases may be robbed of the benefit of a life-saving operation. The value of functional tests is not exhibited in clinically clear cases, which as a rule, can be sent to the operating room after a brief and more perfunctory functional study. However, the great value of determining kidney function becomes apparent in the clinically doubtful cases and particularly in those in which the prognosis is dubious. For these purposes we have found cryoscopy to be a valuable guide as indicating the reserve capacity of the kidneys. There, in reality, lies the most important aid that we can expect from any functional test, and since cryoscopy has apparently given the best results in this respect, we have, in spite of its technical difficulties, tenaciously clung to it and shall continue to do so in the future, unless we become convinced that equally good results are obtainable by another procedure.

Cancer Statistics.—On the Continent of America we also see a corresponding increase in the death rate from cancer. In New York the death rate from malignant disease in 1913 was 82 per hundred thousand of the total population, whereas for the previous five years the average was 79; in Boston it was 118, as compared with an average for the previous five years of 110; in Pittsburgh, 79 per hundred thousand, as compared with 70 for the previous five years; in Baltimore, 105 as compared with 94 for the previous five years; in Chicago, 86, as compared with 81 for the previous five years; in Philadelphia, 95, as compared with 88 for the previous five years; and in St. Louis, 95 per hundred thousand, as compared with an average of 85 for the previous five years. The mortality statistics for the whole of the United States give in 1900 a death rate from cancer of 63 per hundred thousand of the total population; in 1904, of 70.2; in 1909, of 73.8, and in 1912, of 77 per hundred thousand.—W. H. B. Aikens, *Practitioner.*

TRAUMATIC SEPARATION OF THE NERVE ROOTS FROM THE SPINAL CORD

REPORT OF A CASE

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The tearing away of the nerve roots from the spinal cord is, fortunately, a somewhat uncommon accident. When it does occur, however, the diagnosis should be made without much difficulty. In spite of the ease with which the diagnosis is made, the condition is often overlooked. In only a few instances has the diagnosis been verified at operation or at necropsy. Mills[1] reported a case in which operation had been done, and later Frazier and Skillern[2] also published a report of the same case. Of the twenty-three cases found by Frazier and Skillern in the literature on the subject, only one afforded an opportunity to determine at necropsy the extent of the damage done to the nerve trunks.

F. F., man, aged 36, was admitted to the Orthopedic Hospital and Infimary for Nervous Diseases, May 28, 1912. He gave the following history: In 1907 he had fallen between some machinery, and his left shoulder and left arm had been severely wrenched. Any further details could not be elicited. Immediately after his accident the whole left upper extremity became paralyzed, and severe neuralgia set in and has continued ever since.

When examined, his left arm was found to be powerless and hung at his side. All the muscles of the left hand and forearm were totally paralyzed, as were also the serratus magnus, biceps, triceps and brachialis anticus. The deltoid and latissimus dorsi muscles retained considerable power, although they were weaker than the muscles of the opposite side. The rhomboids and the upper part of the trapezius contracted well. Movements of the left pectoral muscle were abolished.

The reaction of degeneration was found to be present in all the muscles of the hand and forearms, and the biceps, pectoralis major and triceps. The supraspinatus and infraspinatus and the latissimus dorsi and deltoid did respond to the faradic current, but not so readily as on the sound side. The rhomboids reacted normally.

The result of the ocular examination made by Dr. Langdon was as follows: The left palpebral fissure was narrower than the right, and the left eyeball seemed to be slightly contracted. The left fissure measured 9 mm., the right, 8 mm. The pupils were unequal in size, the right one measuring 3 mm., and the left one being slightly smaller. Both pupils reacted promptly to light, and accommodation was normal. Two drops of a 4 per cent. solution of cocain caused the left pupil to dilate 6 mm., but the same amount instilled into the right eye caused the pupil to dilate only 4 mm. Two drops of a solution of homatropin hydrobromid, 8 grains to the ounce, dilated the pupils equally, each measuring 6 mm. Measurements taken with the exophthalmometer showed that the left eyeball protruded 16 mm. and the right 17 mm. The optic disks were normal. Vision: O. D., 5/10; O. S., 5/6. The extra-ocular muscles were entirely normal.

Cutaneous sensation was completely abolished below the point corresponding to the insertion of the tendon of the deltoid on the outer side of the arm. Sensations of deep pressure were lost. The ability to recognize movements of the fingers, wrist, and elbowjoint was totally destroyed. The hand was swollen and cold and a purplish-red.

The patient complained bitterly of deep-seated boring and gnawing pain, which seemed to be localized to the palm of the hand and wrist. There was no tenderness, and movement or manipulation of the arm did not influence the pain. The patient described the pain as being constant and deep-seated, sometimes extending up to the elbow, and varying slightly in intensity from time to time.

An operation was decided on for the purpose of exploring the region of the brachial plexus.

June 10, 1912, Dr. William J. Taylor exposed the main trunks of the brachial plexus in the neck, just above the clavicle. On being exposed, the middle and lower trunks appeared to be involved in fibrous tissue. A small portion of the inferior trunk was resected, the adhesions were broken up, and the ends were reunited by suture.

After the patient had recovered from the operation, he was examined for further changes of sensation and motion. The same results were secured as before the operation: resection of the nerve trunk did not produce any additional anesthesia or motor paralysis, but the neuralgia did abate considerably—in fact it almost disappeared for two weeks, after which it gradually returned, and was just as severe as before operation.

After the resected portion of the nerve had been stained with hemalum and fuchsin, and by the Van Gieson and Wiegert methods, it was examined microscopically. The entire cross-section of the nerve trunk was found to be degenerated; not a single normal axis cylinder could be recognized, and there was marked proliferation of the endoneural connective tissue.

The neuralgia did not improve, and the patient continued to complain so much of the uselessness of his left arm that in August, 1912, it was amputated 4 inches above the elbow. The stump healed by first intention.

The nerves of the amputated forearm were dissected out and examined microscopically. The ulna, radial, median and muscle-spiral nerves did not appear to contain a single normal axis cylinder, and there was pronounced overgrowth of fibrous tissue. Degeneration was complete. The degenerative process in these nerves was exactly similar to that found in the resected portion of the inferior trunk. No difference was found in sections taken from any part of these nerves, the peripheral and the proximal portions presenting the same appearance.

The patient was again examined for sensation, and it was found that the upper limits were the same as before operation. The neuralgia seemed to subside somewhat for a few days, only to recur with equal intensity. After the amputation the patient insisted that he still felt the presence of the left hand and fingers, and that the pain seemed in the palm of that hand just as it was before operation. It felt, he said, as if the left thumb was tightly flexed and was boring into the palm of the hand. When asked to place his right index finger on the spot where the pain was felt, he indicated the inner side of the stump of the left arm. The pain was well localized and always located at the same point on the stump. Before amputation there was no contracture of the thumb and fingers of the hand, and they could be freely moved by the examiner, but not by the patient.

The profound motor paralysis and the complete anesthesia, together with the sympathetic paralysis of the eye on the afflicted side, would seem to indicate that the lesion must have been situated proximal to that point at which the posterior thoracic nerve is derived from the fifth, sixth and seventh anterior cervical roots, for the serratus magnus muscle was paralyzed; furthermore, the lesion must have been proximal to the point at which the sympathetic fibers arise from the eighth cervical and first thoracic roots. The deltoid was affected, but a portion of its function was still preserved; all the remaining muscles of the upper extremity, however, were paralyzed. The area of anesthesia conformed to the distribution of the

1. Mills: Pennsylvania Med. Jour., August, 1911.
2. Frazier, C. H., and Skillern, P. G.: Supraclavicular Subcutaneous Lesions of the Brachial Plexus Not Associated with Skeletal Injuries, THE JOURNAL A. M. A., Dec. 16, 1911, p. 1957.

fifth, sixth, seventh and eighth cervical and the first dorsal roots.

It seems evident, therefore, that at the time of the accident the anterior and posterior roots, from which the brachial plexus is derived, had been torn away from the spinal cord. As the deltoid and the rhomboids were not totally paralyzed and the cutaneous sensation was only partially destroyed in the area supplied by the fifth cervical posterior root, it is probable that neither the anterior fifth cervical root nor the posterior fifth cervical root was completely ruptured. Conductivity through these roots, though imperfect, may still have been retained.

This case furnishes additional proof of the accuracy of the present-day teaching that when an anterior spinal nerve root is cut, all the fibers below the point of section die. The distal portion of the root degenerates completely. When the posterior root is cut, all the fibers proximal to its ganglion and between the point of section and the spinal cord die, whereas all the fibers between the divided portion and the ganglion still live. Nevertheless, having been separated from the cord itself, sensations can no longer be conveyed to the brain. It is obvious, therefore, that so long as pain persists, this communication cannot be entirely destroyed; in this case probably portions of one or two posterior roots were not entirely ruptured.

In cases such as that just described, the treatment must be directed merely toward relieving pain. This can be accomplished only by complete section of the intraspinal sensory roots already injured, but still capable of conducting painful sensations. Alcoholic injections into the peripheral nerve trunks would have had no effect, since degeneration had already taken place.

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A PLEA FOR CHOLECYSTECTOMY

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Ochsner,[1] in his "New Manual of Surgery," states: "Cholecystotomy is the operation of choice for removal of stones from the gallbladder." Experiences in the past year convince me that cholecystectomy is the operation of election for cholelithiasis. In 1887 the first excision of the gallbladder was performed by Langenbuch for carcinoma. Since that time the operation has been performed by ever increasing numbers of surgeons. The presentation of a plea for its even more frequent performance is the object of this paper.

In approaching the subject a brief review of the facts known about the gallbladder is of value. The gallbladder, with the liver and pancreas, develops from that part of the fore intestine which later becomes the duodenum. The bile duct and the pancreatic duct drain conjointly into the duodenum at the ampulla of Vater; hence the gallbladder, pancreas and duodenum are anatomically closely related. The bile and pancreatic juice are great factors in the complicated process of digestion, and stimulation of the splanchnic nerves will inhibit the flow of each. Each of these organs, having a common origin, is possessed of the same nerve supply.

The function of the gallbladder is, as yet, not completely known. The physiologists maintain that its main object is the storing of the bile until needed for digestion. J. B. Murphy thinks its action is similar to that of the secondary bulb in a bellows, that is, to maintain a steady, even pressure. This theory is ingenious. At operation, however, the gallbladder is not always found in a state of tension; not infrequently it is seen almost collapsed. The maintenance of secondary bulb action is not absolutely necessary to the individual, as patients from whom the gallbladder has been removed can testify.

The mucous membrane of the gallbladder secretes a clear fluid, which is undoubtedly of some use to the human organism, but this fluid is not a vital necessity to an individual. Mayo[2] has suggested that the organ, like the appendix, is an "obsolescent" stage of human embryology. This sounds reasonable.

The pathology of gallbladder disease has been clearly set forth by MacCarty[3] and reference to his article is desirable. Given a pathologic gallbladder, what should be the choice of operative procedure? Convincing arguments lead to the adoption of cholecystectomy as the ideal procedure, and the relegation of cholecystostomy to a position as an operation of necessity — just as drainage of an appendix abscess without appendectomy is necessary at times, but not ideal. There are certain conditions associated with pathologic gallbladder in which cholecystectomy is contraindicated. In acute and chronic pancreatitis of an advanced type biliary drainage is of distinct advantage, and cholecystectomy out of the question.

In cases in which there is an insurmountable obstruction of the common duct it is self-evident that cholecystectomy would be a fatal procedure. The objectors to cholecystectomy do not, in my opinion, present a very strong case. They state that the gallbladder is a necessary part of the body and therefore should not be removed. Moynihan[4] answers this argument succinctly: "The gallbladder is devoid of any strikingly useful purpose."

A very important statement by the advocates of cholecystotomy is that cholecystectomy is more dangerous. Crile[5] says:

> . . . in cases of acute cholecystitis, with protective adhesions, in which the cystic duct is obstructed, cholecystectomy will give a higher mortality than will mere drainage of the gallbladder, for the reason that during the excision of the viscus, even with the most careful technic, it is necessary to traumatise the surrounding tissue to such an extent that the local immunity of the tissues is impaired. . . . In such cases it is probably wiser to merely drain the gallbladder, interfering with the local tissues as little as possible. Later, if necessary, the gallbladder may be excised.

It has been my experience that even in such cases cholecystectomy is safer. I have never yet been able to find a trochar which did not leak around its puncture site, and have always felt that the danger of peritonitis from cholecystotomy was greater than from cholecystectomy. It is not possible to do a cholecystotomy without soiling the field to a greater or less extent. Moynihan states, following the previously given quotation from him: ". . . and its (the gall-

1. Ochsner: New Manual of Surgery, Ed. 4, Chicago, Cleveland Press, 1915, p. 517.

2. Mayo, W. J., and Mayo, C. H.: Keen's Surgery, iii, 991.
3. MacCarty: Collected Papers, St. Mary's Hospital, 1910, p. 181.
4. Moynihan: Abdominal Operations, Ed. 3, Philadelphia. W. B. Saunders Company, 1914, ii, 289.
5. Crile: Surg., Gynec. and Obst., 1914, xviii, 430.

bladder) removal does not add appreciably to the danger of the operation."

In defense of cholecystostomy the statement is made that true reformation of gallstones is rare.[6] I believe this to be true. Recurrence of symptoms is, however, not rare. Finney[7] writes:

> When we add to the mortality of secondary operations performed after cholecystostomy, the number of which is undoubtedly greater than after cholecystectomy, there is probably little to choose from in respect of the mortality rate between the two. There is always an appreciable percentage of recurrences of gallstones after cholecystostomy, probably less than 1 per cent. But many overlook, of course, doing an operation in which the gallbladder is not responsible for symptoms.

It is urged against cholecystectomy that conditions may arise in the upper quadrant when the need of drainage is urgent, but impossible, on account of the earlier removal of the gallbladder. This is so rare that it can be disregarded. It would probably be more apt to occur if the gallbladder were left behind, as this organ, in my opinion, is the cause of many of the troubles in the epigastric region.

Cholecystectomy has many advantages over cholecystostomy. Primarily, cholecystectomy, in cases of cholecystitis, with or without gallstones, removes from the body the natural habitat of gallstones, the place where the majority of said stones foregather; hence, it takes away the main chance of recurrence and gives the most likelihood of permanent cure.

The most striking advantage of cholecystectomy and the obvious one to the operator is the immediate convalescence. The patient on whom a cholecystostomy has been performed goes back to bed with rubber tubing ¼ inch to 1 inch in diameter and 2 or 3 feet long emerging from his belly. This is attached to a drainage bottle and pinned, to prevent its pulling out of the gallbladder, to the sheeting. For from seven to fourteen days, and perhaps longer, in some cases, this tubing remains, constantly tugging and pulling on the tender wound, causing untold agonies. After removal of the drainage tube the abdominal wall is bathed in biliary discharge, dirty and sticky, if not irritating — on the whole a rather miserable existence for a person of fine sensibility.

Contrast that picture with that of the immediate convalescence in cholecystectomy.

The abdominal wound can be closed without drainage or at most a small cigaret drain for forty-eight hours. This makes the convalescence immeasurably more comfortable and also shortens it greatly.

Some months ago I made a cholecystostomy for cholelithiasis. Ten days later, two cholecystectomies were performed for similar conditions, and both these patients left the hospital over two weeks before the cholecystostomy patient.

A young woman on whom a simultaneous appendectomy and cholecystectomy were done was out of bed on the fifth day and left the hospital on the seventh day, feeling very well, with the wound entirely healed. It is impossible to get any such result from a cholecystostomy. Hence, cholecystectomy has an economic advantage in lessening the stay of the patient in the hospital.

The higher mortality for cholecystectomy quoted by the majority of writers is due not to the operation per se but to the delay in reaching operative interference.

Deaths from appendicitis are due to delay, not to the operation performed, be it excision or drainage. This is the case with cholecystitis.

The public should be educated concerning diseases of the gallbladder, as it has about appendicitis, and there is no doubt that it will respond as quickly.

The series of cholecystectomies on which I base this paper number seventy-seven. In these there have been but two deaths. One death occurred in a case in which the gallbladder had spontaneously anastomosed with the duodenum, and, after closing the opening in the doudenum and removing the gallbladder, I found carcinoma obstructing the common duct. This death was due to bad judgment, not to the cholecystectomy per se.

The second death occurred in a case of cholelithiasis, in which the patient went to the operating table without the proper previous medical examination. No operation of any kind would have been performed if the status of kidney and heart had been known previous to operation. Cooperation between medical and surgical science in hospitals is absolutely necessary to good operative results.

In two of the cases, in addition to the cholecystectomy, both an appendectomy and a gastro-enterostomy were done at the same time.

6. Stanton, E. MacD.: Ann. Surg., February, 1915.
7. Finney: Canada Lancet, 1913-1914, xlvii, 892.

VIABILITY OF BACILLUS TYPHOSUS IN ICE CREAM *

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The use of various frozen foods and confections in which milk and milk products serve as a basis or constituent has become so great as to demand serious attention from sanitarians. The persistence of the typhoid bacillus in milk and milk products is well known, and many cases and epidemics are recorded which have been transmitted by this food. It is also known that *Bacillus typhosus* is not a normal inhabitant of milk. In only one instance,[1] and this is not accepted by some bacteriologists, has *Bacillus typhosus* been demonstrated in the flesh and organs of the cow. Through polluted water, from the hands or person of convalescents or carriers, or in some similar way the bacillus gains entrance into milk. In other words, *Bacillus typhosus* in milk and milk products comes from human sources. It is for these reasons that the milk products which are handled the most are the most liable to contain the micro-organism.

Ice cream is a complex mixture, the number of ingredients being variable. Because of the liability of contamination, great care should be used in its preparation. That great care is not always exercised was shown by Wiley[2] in 1906-1907, who found that in the city of Washington of a number of places manufacturing ice cream three were clean, nineteen were dirty, sixteen were fair and nine filthy. Wherever investigations have been made in places where regulations or their enforcement were lax, conditions have not been found highly satisfactory.

* From the Department of Preventive Medicine and Hygiene, Harvard Medical School.

1. Levy and Jacobstahl: Arch. f. Hyg., 1902, xliv. Hirschbruch and Marggraf: Arb. a. d. k. Gsndhtsamte., 1913, xliii, 623.
2. Wiley: Washington Med. Ann., 1908-1909, vii, 61.

The bacterial count of ice cream is usually high, but is much lower with cleanly prepared products. The presence of such a large number of bacteria complicates experimental study. Bahlman[3] found that other substances besides milk, particularly gelatin, frequently contain a large number of bacteria, but because of the amounts used, that milk and cream are the main sources of bacteria.

The impossibility of excluding other probable sources of infection makes epidemiologic studies of supposed ice cream epidemics unsatisfactory. There are five instances in the literature in which ice cream is mentioned as acting, or possibly acting, as a conveyor of typhoid fever. Turner,[4] in 1892, reported an epidemic of typhoid fever which to his mind was transmitted through ice cream. This outbreak occurred in the Sanitary Districts of Greenwich and Rotherhithe, England. An extensive investigation was made by Turner and other health officers with the result that they believed nothing but ice cream sold by Italian venders was responsible for the epidemic. Several of the Italians had typhoid fever in their families; one dealer had two cases which occurred just before the epidemic.

Munro[5] studied an epidemic of 800 cases of typhoid fever which occurred in Mid-Renfrewshire, England, in 1893. The water supply was found polluted, but it was thought that eighty-six of the cases were traceable to ice cream.

Hope,[6] in 1898, investigated an epidemic of nineteen cases of typhoid fever which occurred in the suburban district of Knotty Ash, near Liverpool, England. With the exception of temporary closets, which were used while the drainage system of the school was being repaired, and a foul brook nearby, no possible source of infection was noted until the evidence pointing to ice cream sold by an Italian vender at a fair was obtained. All the sick were schoolchildren, and all of them had been to the fair. Hope states that the water and milk supplies could be excluded.

Behla[7] reported an epidemic caused by whipped cream and ice cream.

Rosenau[8] makes the following mention of ice cream: "Freezing kills only a certain percentage of typhoid bacilli. In Washington several cases of the disease were traced to ice cream."

The epidemiologic studies are not numerous or extensive enough to be very valuable. Some of them are highly suggestive, but the evidence cannot be considered as certain proof of ice cream transmission.

EXPERIMENTAL DATA

In order to study the viability of *Bacillus typhosus* in ice cream, six mixtures were frozen. *Bacillus typhosus* was then incorporated in the preparations. Samples of 100 c.c. were removed from each and placed in covered glass containers, and these were packed in a salt and ice mixture. The temperature throughout the experiments varied from 3 to 4 below zero Centigrade.

EXPERIMENT 1.—Ice cream was made according to a formula in Fannie M. Farmer's cook book. One-half teaspoonful of flour, a few grains of salt and one-half cup of sugar were mixed, and to this were added half an egg, slightly beaten, and 1 cup of scalded milk. The mixture was then cooked in a double boiler for twenty minutes. When cool, 1 pint of thin cream and 1 tablespoonful of vanilla were added. The mixture was then frozen. The number of typhoid bacilli added was 70,000 to each cubic centimeter of ice cream. Samples were removed twenty-four hours after inoculation and plated on Endo's medium and plain agar. Many typical typhoid colonies were present on the Endo plate. Subsequent culture and agglutination proved the bacteria to be typhoid bacilli. The total bacterial count was 450,000 per cubic centimeter. After four or five days the ice cream became separated into a watery and a cream layer. This separation occurred after each examination when the preparation was well stirred and the different layers thoroughly mixed. *B. typhosus* was recovered for the last time on the twelfth day after inoculation. No attempt was made to study the percentage of *B. typhosus*, but it was easily noted that a gradual decrease took place. At the time of the last isolation, the total bacterial count was 900,000.

EXPERIMENT 2.—Ice cream made with 1 pint of thin cream, one-half cup of sugar and 1 tablespoonful of vanilla was treated similarly to the ice cream in Experiment 1. To each cubic centimeter of the ice cream 70,000 typhoid bacilli were added. The total bacterial count, twenty-four hours after inoculation, was 300,000, and many typical typhoid colonies appeared on Endo plates. Subcultures and agglutination were positive. The last isolation, thirty-nine days after inoculation, showed very few colonies of any kind, and the total bacterial count was only 16,000. The ice cream showed the same separation as that of Experiment 1.

EXPERIMENT 3.—To an ice cream made like that of Experiment 1, except that to the quart 1 level tablespoonful of Knox gelatin was added, 40,000 typhoid bacilli per cubic centimeter of ice cream were introduced. The ice cream was kept like that of previous experiments. After twenty-four hours the total count was 660,000, and Endo plates yielded many colonies which proved to be typhoid bacilli. The ice cream remained quite hard for about ten days and then softened, became separated into layers, was semifluid and stringy. *B. typhosus* was isolated for the last time twenty-five days after inoculation, and the total bacterial count on that day was 5,600,000.

EXPERIMENT 4.—Ice cream was made like that of Experiment 2, except that to the quart 1 level tablespoonful of Knox gelatin was added. To each cubic centimeter of the ice cream, 40,000 typhoid bacilli were introduced. Packing and storage was the same as in other experiments. After twenty-four hours, the total count was 1,200,000, and a large number of typhoid colonies, as shown by subsequent tests, were present on Endo plates. The consistency of the ice cream remained about the same as that in Experiment 3. The number of typhoid bacilli gradually decreased, and the last positive examination was made twenty-one days after inoculation. The total count at that time was 500,000.

EXPERIMENT 5.—Ice cream was made the same as in Experiment 1, except that pasteurized milk and cream were used and nine grams of "Flake" were added to the quart. Flake is a powder prepared by the Murray Company, 224 State Street, Boston. According to a circular accompanying the powder, the preparation "is a pure, wholesome powder, which can always be relied on, and is essential in making an exquisitely smooth ice cream." To each cubic centimeter of the ice cream, 320,000 typhoid bacilli were added. It was then packed and stored. After twenty-four hours the total count was 1,440,000, and typhoid colonies were numerous on Endo plates. After a few days the ice cream became quite soft, and separated into a watery and a cream layer. Examinations made every few days gave positive results until thirty days after inoculation, when the experiment was discontinued. The total count at the time of the last examination was 990,000.

EXPERIMENT 6.—To a preparation like that of Experiment 1, except that pasteurized cream and 9 gm. of Flake to the

3. Bahlman: Am. Jour. Pub. Health, 1914, iv, 1009.
4. Turner: Practitioner, London, 1892, xlix, 141.
5. Munro: Public Health, London, 1894-1895, vii, 30.
6. Hope: Liverpool Med.-Chir. Jour., 1898, xviii, 185.
7. Behla: Klin. Jahrb., x, 256.
8. Rosenau: Preventive Medicine and Hygiene, New York, D. Appleton & Co., 1913, p. 90.

quart were used, *B. typhosus* to the extent of 320,000 per cubic centimeter of ice cream was added. After storage for twenty-four hours, the total count was 1,600,000, and typhoid colonies were numerous on Endo plates. The last positive result was obtained twenty-seven days after inoculation, when only one subcultural colony from the Endo plate proved to be *B. typhosus*. On the date of the last finding, the bacterial count was 1,060,000. After a few days' storage this ice cream showed the same changes as that of Experiment 5.

All of the preparations had about the same odor at the beginning. They were pleasant smelling, owing largely to the presence of vanilla. After a few days they began to lose their sweetness of odor, and at the time of the last examinations they gave off mildly unpleasant odors.

CONCLUSIONS

1. *Bacillus typhosus* survives in ice cream for varying lengths of time, in the recorded experiments from twelve to thirty-nine days. It is plain, therefore, that ice cream may easily transmit typhoid fever.

2. The findings emphasize the necessity of strict cleanliness in the manufacture of ice cream, and the importance of pasteurization of milk and milk products used in these mixtures.

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TYPHOID FEVER RESULTING FROM INFECTION OF AN UNPASTEURIZED MILK SUPPLY

REPORT OF A SERIES OF FIVE CASES

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This series of five cases of typhoid fever is reported merely to emphasize (1) the dangers of an unpasteurized milk supply, and (2) the necessity of reporting contagious diseases to the proper authorities. The details of the onset, the incidence of age, sex, etc., are in the records of the division, but are unnecessary in this brief report.

Late in January and early in February, 1915, five cases of typhoid were reported to this division, each one of the patients having received his milk supply from the same dealer. This, with the explosive character of the outbreak, made us suspect that infected milk was the cause. With this in mind, the following plan of investigation was outlined: first, investigation of the milk depot; second, of the dairy from which the milk came, which was located 90 miles from Cleveland; third, of the cases and their relation to other people to exclude contact; fourth, of the train-men; fifth, of the handlers at the depots at the shipping and receiving points.

This procedure, including detailed data concerning the families of those inspected, yielded negative results until the handler who took the cans from the train in Cleveland was seen. He stated that his wife had been ill about eight weeks with "what the doctor said was typhoid fever," but the doctor failed to report to the health department. He said also that he had been given permission by the dealer to open the cans and take such milk as he required from them, and that this had been done both before and after and during his wife's illness. Two weeks previous to the onset of her illness he had been off duty himself for five days with what he thought was the grip, but no doctor's diagnosis is obtainable. The Widal on his blood gave a suspicious test, and on that of his wife a positive test in dilution as high as 1:100. Stool examinations in both cases were negative, but were first taken several weeks after the onset of the disease. We feel justified, however, in believing that these five patients, of whom one died, were infected by milk contaminated by this man. Investigation showed that he had dipped the milk from the cans with a cup from his own dinner pail which was carried back and forth with him from his home. The difficult point in the differentiation is whether the infection came from the man himself during an attack of typhoid which he thought was grip or from the infection of the wife, whose care was largely in the husband's hands.

Had the milk been pasteurized on its arrival in Cleveland, this trouble would not have occurred. Had the case of typhoid been reported by the physician in charge, the routine investigation would have given us at once information which would have prevented the carrier from coming into contact with the milk at any time. Another point of value is that if the cans had been sealed, this series of cases could not have occurred.

DESTROYING LIMITED OBSTRUCTIVE GLANDULAR GROWTHS IN THE POSTERIOR URETHRA BY THE HIGH FREQUENCY CURRENT *

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We are agreed, I take it, that for the most part cautery work in the posterior urethra, or at the bladder neck, by the various methods now in common use through an electrically lighted instrument, is tedious and capable of destroying but a small amount of tissue at a sitting. The ordinary electric cautery point, while marvelously efficacious in relieving the early irritability and early irritation of incipient prostatism and also of ridding the patient of quite small projections and growths—even this requires many treatments at not too short intervals. If the obstructing part or growth is considerable, it is often impossible to treat it effectively in this manner. An ordinary urethral electric cautery point small enough to be accurately placed in plain view of the operator through an average sized urethra is so small, develops so little heat comparatively and in contact with living tissue is so quickly cooled that only the very small or succulent masses may be made to slough.

High frequency current methods have attained great vogue, and justly. But the methods of application are capable of great extension as, one at a time, difficulties are overcome. The Oudin or monopolar current has been efficacious in bladder papillomas especially, where there is plenty of room to manipulate the electrode and obtain a long spark gap. In the urethra it is more difficult by reason of close quarters, gases collecting and obscuring the view; also work in small space requires shortening of the spark gap to avoid

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unpleasant ground shock. This is much easier to prevent with the bipolar current—the large neutral electrode being placed under the buttocks or over the pubes. The devitalizing of tissue is much more rapid and extensive and secondary hemorrhage is less likely to occur. We have had one case of very distressing and with difficulty controlled secondary hemorrhage after so-called fulguration with the Oudin current of a posterior urethral polyp; we have had none follow the bipolar method, though the latter has been more frequently used.

Whether or not we use the Oudin or bipolar current, the work has been done through various types of instruments as follows: once, through an open tube with the McCarthy fulguration electrode handle; but usually through a Buerger convex sheath operating cystoscope; a McCarthy cysto-urethroscope or a Braasch single catheterizing. The differences in construction make one instrument applicable where another after a trial may prove not to be. The Squier-McCarthy electrode was found most convenient and efficient, both the No. 6 and No. 11.

One has cases, however, in which neither the ordinary electric cautery or the foregoing high frequency methods is adequate. Such cases comprise carcinomatous prostates in which a partial removal has been done and a suprapubic fistula will not close; bladder neck contractures, when a punch will not pass; also bladder neck contractures when hemorrhage is feared, or for some reason adequate attention following the punch operation is not feasible; bladder neck shelves and band hypertrophy of the region about the glands of Albarran when a punch will not enter; benign growths of considerable size, comparatively, in the posterior urethra or at the bladder neck; cases of excessive pocket formation in the prostatic bed after enucleation for benign growths.

The reason for the failure of the previously described procedures is plain. The lesions are comparatively gross but mainly focal so far as obstruction is concerned. There is simply too much tissue too dense to be destroyed by any such available and insulatable amount of electrical energy. Up to the present time, so far as I have been able to learn, there has been brought forward no substance surrounding a conducting wire in sufficiently small radius and flexible enough that it can be fed into the very largest cystoscopic or endoscopic catheter channel now in actual use, capable of insulating the amount and kind of electrical energy absolutely necessary to completely devitalize such obstructions and cause them to slough. We trust some one will soon bring to light some such substance.

In lieu of the ideal insulating substance that is also flexible, we have resorted to the use of a nonflexible insulating material which also serves the purpose of a guard to regulate the depth of penetration of the electrode points. It is simply a convenient length—8 or 9 inches—of silica tubing the diameter of a No. 11 Charriere catheter. One end is fitted into a groove of a pistol-shaped handle of fiber and made tight with a set screw. The inside diameter is approximately 1 mm. or that of a No. 3 Charriere ureteral bougie. Through the top of the pistol handle and on through the bore of the silica tubing is inserted a convenient length of drill rod or piano wire, sharpened to a needle point on the business end. The usual length is about a foot. The excess, bent over behind the handle, forms a small loop on the end in which to fix, with a watch-chain snap, the high frequency connecting cord. The sharpened end of the wire is pushed out beyond the distal end of the silica tubing to any desired distance, usually 0.5 to 2 cm., and is fixed with a second set-screw. The wall of the silica tubing being over a millimeter in thickness, acts as an efficient guard to prevent too deep penetration, and when fully up against a tissue produces a sense of resistance to the operator's fingers. The manner in which it is used is very like the treatment of a mole by an ordinary electrolysis needle, except that the needling is all by parallel insertions. The insulated and guarded needle is inserted through any open endoscopic tube most suitable for bringing that particular growth or obstruction into view and into direct line. The most generally satisfactory tube with us has been the MacGowan urethroscope. This with the vacuum-pump attachment keeps the field free from urine or blood present and the flat side enables one to place the electrode to better advantage. A MacGowan-Swinburne tube is useful sometimes. A Young's punch in bladder neck contractures and polypi that will present into the fenestrum is also exceedingly useful. Once we used a single catheterizing Braasch with water distention. In this case 1 cm. of the wire at the needle end was bent at an obtuse angle from the body of the wire to better catch a nodule and polypoid growth.

The part to be destroyed is brought into view at the end of the endoscopic tube and the electrode inserted to a depth previously determined on and insured by tightening the set-screw. The current is then turned on with the foot-switch for from two to ten seconds, depending on the amount of tissue to be destroyed, the amount of current used, and the length of the spark gap. The electrodestructive action extends radially around the needle and is quite circumscribed at both the periphery and the point. The usual diameter of the slough is 3 or 4 mm., as we have made the applications. One must use judgment as to the points of insertion, their number and their depth; usually two or three separate needle insertions being sufficient. This is best learned by experimentation with small surface growths whose progress and sloughing can be watched subsequently at frequent intervals. The sloughs come away in from forty-eight to sixty hours if the needling has been well performed.

The silica tubing is quite brittle and sometimes breaks; but a new piece is easily and quickly inserted. It would be nearly ideal except for this friability. Larger sizes than are really needed for insulating purposes are for this reason necessary. We have endeavored to find something superior. The most promising prospective substance is Bakelite. The authorized molders of Bakelite discouraged us at first in the use of this; but just recently the General Bakelite Company has given us faith that they will be able to supply us electrodes that will be more easily handled. This should give the method a wider application in the urethra and in the bladder particularly with the electrode inserted through a single catheterizing Braasch. In this way the number of treatments could undoubtedly be greatly reduced.

The type of machine used should be one giving a constant milliamperage, no matter what amount of current (in reason) is being consumed; an absolutely induced current and one which is not taken off the main transformer, thus avoiding ground shocks. This

of course means a bipolar current; a d'Arsonval current may be used, but unquestionably the ordinary d'Arsonval has been improved on for this purpose. If only this type of current is supplied by the machine, it considerably cheapens the cost and lightens the weight, thereby making it much more conveniently transportable to and from hospitals.

I shall report the following cases occurring in the private practice of Dr. Granville MacGowan and myself. Out of 39 cases of intra-urethral or bladder neck cautery operations during the past thirteen months, 31 were by either the simple electric cautery or high frequency cauterization with flexible electrodes; 8 were done by the silica insulated wire needling and bipolar current. Only selected cases were chosen for this method. There were two failures and six successful operations.

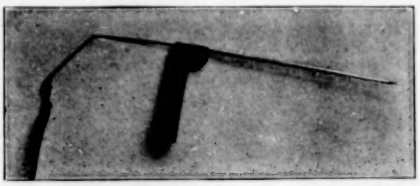
CASE 1.—W. M., a large fat man, aged 65, had complete retention for the first time in September, 1913, with practically continuous catheter life thereafter for four weeks at hospital; when the bladder was opened suprapubically a large indurated prostate with both an anterior and posterior bar was found to be the cause of the obstruction. Enucleation proved very difficult on account of the adhesions of the surrounding parts; the vesical sphincter and a portion of the seminal vesicle were partially torn away in an effort at enucleation and had to be removed with scissors. The peritoneal cavity was accidentally opened at the bottom of the wound. It was not considered necessary to dissect it away further, for there appeared to be a free enough channel without this; tissue being apparently cancerous and the hemorrhage very free, and as the peritoneal cavity had been opened in the removal of the vesicle, doubt was entertained as to his operative recovery anyway. When the packing was removed the peritoneal wound gave no trouble and had apparently closed. With time the suprapubic wound healed with a small fistula. Urination was very difficult and became progressively more so. The bladder was reopened and an attempt made to remove the anterior obstructing bar. He had a very thick abdomen, which with its powerful muscles made it impossible to reach all of the obstructing parts and do a complete resection of the growths and bar. After wearing the suprapubic drain for months he was subjected to high frequency cauterization. No instrument could be made to pass through the urethra into the bladder. A MacGowan urethroscope was inserted down to the obstruction, which presented very definitely against the opened end of the endoscopic tube but from the anterior wall. Two insertions were made, with the silica-guarded needle, about 1 cm. apart. In less than sixty hours six or seven sloughs came away and then he urinated for the first time in many months. We repeated this cooking process in three weeks, cleaning away the rough points. The suprapubic wound closed and the urine thereafter passed freely per urethram for eleven months, when the stream again slowed; and after the passing of a steel sound for dilatation, a terrific hemorrhage occurred which was very difficult to control. The suprapubic wound opened again for a few days but finally closed, and he urinates again with reasonable comfort and frequency.

CASE 2.—A. S. P., aged 69, in September, 1914, had partial enucleation of the prostate which, microscopically, was carcinomatous. A piece was removed the size of a walnut. Beginning one month later through MacGowan tubes in the urethra, and Kelly tubes suprapubically, we needled the obstructing and irregular projections at four sittings. The surface healed and was fairly smooth. The suprapubic fistula closed, he went home and has urinated easily ever since.

CASE 3.—B. H., aged 76, in September, 1914, came from a neighboring state almost delirious after a twenty-four hour trip without urinating. It was impossible to introduce a cystoscope. Drained suprapubically for three weeks until phthalein increased and was constant. The operation was a partial removal of the prostate, which, microscopically, showed cancer. The suprapubic fistula healed tardily and he had from 2 to 6 ounces residual at all times. Pocketed. To improve matters he was needled through the urethra. The needling could not be done at the crest of the obstruction. The result was nil except a very disagreeable convalescence.

CASE 4.—C. C. W., aged 65, in June, 1914, underwent enucleation of the prostate for fibro-adenomas. Several months later a soft rubber catheter would not enter the bladder or return injected fluid. Some slight irritation resulted and 1 ounce residual. Needling in office was done under alypin and cocain anesthesia through a MacGowan tube. The patient passed sloughs in thirty-six hours thereafter. Since then a soft rubber catheter enters easily and residual has disappeared.

CASE 5.—I. C. G., aged 50, came to Los Angeles suffering with extremely painful erections, occasional small urinary hemorrhages and sharp pain in perineum and rectum. Small projections were at the sides and posterior surface of the urethra in front of the bladder neck. Residual, if any, not determinable, for the reason that no type of catheter large or small, nor any cystoscope, would pass into the bladder. Most of the anterior nodules were burned away with electric cautery. The needling operation was unsuccessful, the needle going into the tissues at an angle back of the urethra and not entering the crest of the obstruction. He was later opened suprapubically, and had a banded bar at the bladder neck which was cut away with rongeurs and Young's punch. Recovery, and objectively cleared up as subsequently determined by cystoscopic and urethoscopic examinations.



Silica insulated and guarded electrode.

CASE 6.—J. W. S., aged 54, in June, 1913, stone in the bladder, with 4 ounces residual. I crushed the stone and fulgurated the polyp in the posterior urethra near the bladder neck. Cystoscopy revealed marked trabeculation and a large diverticulum on the right side. One year later residual was 70 c.c. Only long curved silver catheters or cystoscope would enter the bladder, there being inability to pass any flexible catheter. Young's punch was inserted and needling done. The spark gap had to be shortened by reason of metal contact at the end. The punch could not be easily pushed back into the bladder and so it was decided to punch out the cooked portion. After two hours in office and practically no bleeding he went home 18 miles by trolley car, returned in three days and emptied his bladder and had had practically no bleeding. Residual is 5 to 10 c.c. at present.

CASE 7.—J. W. B., aged 45, in January, 1914, underwent suprapubic cystotomy for stone. A large diverticulum was on the right side near the ureter opening. The bladder neck was very much contracted. Circumstances over which we had no control gave us no chance to examine and study the case previous to operation. The suprapubic fistula would not close. In September, 1914, a radical operation for the cure of the large bladder diverticulum was preceded by needling of the posterior bladder neck through an endoscopic tube. The patient left the hospital in seven weeks with no residual and has no residual at present.

CASE 8.—J. W. A., aged 60, had 2 ounces residual urine. The urine from the left kidney contained a small amount of pus. He had constant pains in the left testicle. There was obstruction from a nodule on the left side of the posterior

urethra near the bladder neck. An ordinary electric cautery failed to make any impression on the obstructing nodule. Operation was by needling through a single catheterizing Braasch with water distention. Endoscopic examination six weeks later showed a smooth surface and residual had disappeared.

CONCLUSIONS

1. A much greater amount of tissue can be cooked at a sitting than by ordinary high frequency methods.
2. The point of application can be made to better advantage in some cases—especially when the urethra is somewhat choked.
3. Masses can be made to slough which could hardly be impressed by the usual procedures.
4. There is little fear of even slight hemorrhage and very little postoperative reaction.

Lissner Building.

ABSTRACT OF DISCUSSION

DR. STANLEY R. WOODRUFF, Bayonne, N. J.: The use of the cysto-urethroscope is very important, because there are so many lesions in the posterior urethra which are entirely overlooked. It is particularly in these cases that the cysto-urethroscope is used and is of so much value, because the posterior urethra and bladder can be examined at one sitting. The instrument of Dr. McCarthy is an indirect instrument, and another good point about it is that it is a near vision instrument. Nearly all of the other indirect instruments are what we term far vision instruments; that is, one must hold the instrument at a considerable distance from the object in order to get a good view of it. This instrument being a near vision instrument, one can put it exactly on whatever object one wishes to look at and get a clear view and the focus will be good. I believe that patients, especially those coming to you complaining simply of frequency, in order to make a proper diagnosis, should have the posterior urethra examined as well as the bladder. If you pass a cystoscope into the bladder and examine that alone, you have not done enough. We have at present three young men complaining ever since birth of enuresis. They have had almost everything done without effect. These cases under examination all showed a growth of tissue back of the verumontanum, filling up the fossa and even impinging into the internal sphincter, which gives you the reason why they were troubled as they were. Every time the internal sphincter shuts down it would grasp this little mass of tissue. We use entirely the d'Arsonval current. We have given up the Oudin current. The latter makes more fuss and cauterizes more quickly, but has not as deep an effect. I have yet to see a case in which we could not burn out all the tissue necessary. We use a constant irrigation, for at the same time you can burn and carry away all the bubbles, leaving a clear field of vision. There has never been any trouble about getting sufficient penetration. The electrode which Dr. Day has shown I have had no experience with. It seems to me pretty sharp to use in the posterior urethra. Sometimes your patient makes a jump. I should be rather afraid it would traumatize the urethra. If there is any part we wish to traumatize less, it is the posterior urethra. We have observed cases following injuries to the posterior urethra, showing nervous conditions, inability to have erections, and often inability to ejaculate. We use the ordinary soft, flexible, urethral electrode with the olivary tip.

DR. W. P. WILLARD, San Francisco: Surely a note of warning should be sounded against the promiscuous use of instruments in the posterior urethra. Unless a man has had experience in making an examination of the posterior urethra, and knows what he sees and can differentiate the normal from the abnormal, he should not use these instruments.

I have had within the last year two cases I would like to cite on account of the remarkable improvement they made in a very short space of time from the use of the Oudin current. One of these cases was a man of 50 and the other was a man of 70. The prostates were not enlarged in any way, and there was no residual urine, but they each complained of great frequency, one man as often as every hour and the other man probably every two hours day and night. They were examined cystoscopically and the prostatic outline appeared normal and the sphincter outline was regular. The only thing noticed was a large number of small cysts projecting, as I have seen many times before, from the prostate and within the internal urethral orifice. I used the Buerger cystoscope with the single wire and punctured as many of these cysts as I could. In both cases I did it all at one sitting. The man of 70 reported back within a week and he said he had not felt as well in twenty years. Within three or four days after the manipulation, after the irritation from the instrumentation had subsided, he said he could hold with very little difficulty his urine for three hours, and had gone as long as four hours at night.

DR. GRANVILLE MACGOWAN, Los Angeles: I am astonished by the dogma put forward by one of the speakers that we must not injure the posterior urethra. No one is going to use this instrument without a definite reason therefor. The excuse is some pathologic condition requiring removal. The warning is applicable to those only who would indiscriminately operate for the sake of experience. One cannot use an instrument in the posterior urethra without traumatizing more or less. The urethra can be thoroughly anesthetized by the use of stovain or alypin nitrate, either of which will be effective generally for a sufficient length of time; if not, a reasonable amount of 10 per cent. solution of cocain placed in there with a fine urethral syringe will do the trick. This, however, should always be guarded by an equal quantity of 1:1,000 solution of epinephrin, or the tissues can be injected through an endoscopic tube by means of a very long and fine hypodermic needle with a 5 per cent. solution of novocain.

DR. ROBERT V. DAY, Los Angeles: Regarding the danger from the sharp point referred to by the first speaker, it is made purposely this way so that it does not shove the tissues out of the way. For that matter it may be probe pointed or bayonet shaped. In regard to the amount of tissue it will take away, it is not intended for those cases which can be treated successfully through the McCarthy fulguration urethroscope, but for those lesions that are larger than can be shown in the field at the close range of the McCarthy instrument, or those which choke the passage. I am not very much impressed with the Oudin current in cases of this kind. It relieves a great many times, but our method is not intended for small obstructions that can be reduced by the ordinary high frequency methods, which means we use extensively also, when applicable.

Florida and a "Health City"

At the meeting of the American Medical Association at New Orleans in 1885, Dr. Washington Chew Van Bibber, a distinguished physician of Baltimore, read a paper on Florida and its climate. It is an interesting circumstance that thirty years afterward the *Manufacturers Record* should find in this paper observation and comment of sufficient value to interest its readers. In its October number, the *Record* makes long quotations from this paper which deal chiefly with the advantages of the state as a winter resort, or as a resort all the year round, not only for pleasure seekers, but also for invalids of various types. Dr. Van Bibber contrasted Florida as a health resort with other sections of the United States and with the well-known resort regions of Europe.

He made the interesting proposal that a "health city" should be built in Florida, and suggested that the nations of Europe and America be invited through the medical, social and scientific press to unite in the erection and improvement of such a city. This he felt was necessary because at that time the resorts of Florida were not in a sufficient state of sanitary development and improvement to fulfil the requirements of a perfect "health city."

Dr. Van Bibber died in 1892. He did not live to see the fulfilment of his "health city" project, but with the modern development of city sanitation, all health resorts should become "health cities."

ANTEVERSION OF THE NECK OF THE FEMUR

IN CONNECTION WITH CONGENITAL DISLOCATION OF THE HIP *

RUSSELL A. HIBBS, M.D.
NEW YORK

A careful study of my failures in the treatment of congenital dislocation of the hip has convinced me that some of those failures were due to anteversion deformity of the head and neck of the femur which was not recognized before operation.

A certain number of those cases have since been treated with complete success by the method to be described.

Anteversion of the head and neck of the femur has of course been recognized, but the frequency of its occurrence has not been appreciated, at least by me, nor its influence on the final result in the treatment of congenital dislocation of the hip. Much more consideration has been given to defects in the acetabulum, and without doubt the acetabulum is more or less defective perhaps in all cases, and in some, to such a degree as to prevent cure. I believe, however, that this deformity of the femur is more often the cause of failure to secure ideal results. No case of congenital dislocation can be considered absolutely cured until the head is wholly in the acetabulum and the gait of the patient and function of the joint normal. It does not seem possible to me to obtain such a result when this deformity exists to any considerable degree.

Fig. 1.—An osteotomy of the femur at its lower third for the correction of anteversion of neck. Bone at left shows anteverted head; in center, lower fragment twisted out correcting deformity; at right, deformity corrected, normal bone.

There is a certain amount of anteversion in the normal femur, but probably not more than from 10 to 15 degrees. Dr. Durham, one of my staff at the Orthopaedic Hospital, recently made a study of 200 normal femora, and found that the average amount of anteversion was 11 degrees. More than this amount is abnormal, and certainly when it is as much as from 75 to 90 degrees, grossly so. With the leg straight and the toe and patella pointing forward in the normal direction, the head of the femur cannot be completely in the acetabulum. With the head thus partially engaged in the socket, weight bearing is uncertain and there is always a limp.

Fig. 2.—Congenital dislocation of hip with anteverted head and neck of femur.

Fig. 3.—After osteotomy; deformity corrected.

The question as to where the deformity takes place is an important one. It seems probable that it is due to a twist in the shaft of the femur, because by Roentgen-ray study there is found no appreciable

* From the Service of the New York Orthopaedic Hospital.
* Read before the Section on Orthopedic Surgery at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

change in the relation of the head and neck to the two trochanters, as would be the case if the deformity were due to any change there.

Two roentgenograms in a given case will demonstrate this conclusively, the first taken in the usual position with the patella and toe pointing forward, the second with the femur in internal rotation, the patella and toe pointing inward. A comparison of the two plates will show that a perfectly normal head and neck exist in a normal relation to the two trochanters and indicate that the deformity is in the shaft of the bone.

It would seem logical, therefore, to treat the matter as a twist of the shaft of the femur, and correct it by osteotomy before any attempt is made to reduce the dislocation. That is what has been done in a series of twenty-nine hips in twenty-six children at the Orthopaedic Hospital, all the earlier patients having been previously operated on for dislocation once and in some instances twice, with failure. The first three cases were shown before the orthopedic section of the New York Academy of Medicine, April 18, 1913.

Fig. 4.—After reduction of dislocation; normal hip.

No attempt has been made recently to reduce the dislocation until this deformity is corrected. It is done by an osteotomy at the lower third of the femur. After the bone is divided, the lower fragment is twisted outward to the degree that the head is abnormally anteverted. After the bone unites, the patient is allowed to walk from eight to ten weeks until the external rotation of the leg is corrected by exercises and it takes the normal position in walking, the patella and toe pointing forward. At this point in the treatment the dislocation should be reduced.

The lower third of the bone is selected for operation for two reasons: first, because at this point there is the least interference with muscle attachments, and second, because both fragments are long enough to give perfect control of them. Both of these are important considerations in the accurate correction of the deformity and the preservation of the function of the muscles.

Fig. 5.—In plaster after osteotomy.

Figure 1 is a photograph of a femur on which the operation has been done.

A. E., girl, aged 5 years, had congenital dislocation of the left hip with 1½ inches shortening and an anteversion of head and neck of femur of 85 degrees. Two unsuccessful operations had been done for the dislocation, the deformity not having been recognized.

February 14, 1913, osteotomy of the femur was done and the deformity corrected by external rotation of the lower fragment; a plaster spica was applied. At the end of six weeks the plaster was removed, walking permitted and exercises begun.

May 17, 1913, external rotation was entirely corrected. The dislocation was reduced. Plaster was applied, changed at intervals of three weeks, and removed at the end of two months. Result, May, 1915: head of the femur in the acetabulum, limbs equal, joint function perfect, patient walks without limp.

The roentgenograms taken in this case are shown in Figures 2, 3 and 4. Figure 2, in the ordinary position, toe and patella pointing forward; Figure 3, after osteotomy taken in the usual position, toe and patella pointing forward showing deformity corrected, and Figure 4 showing head in the socket, a normal hip.

It does not seem necessary to report in detail more than this one case, as in every essential the procedure was the same in all of them, except the younger patients wore plaster after the hip was reduced for a longer period, three to four months.

It is important, however, to emphasize the need of great care in correcting the deformity after osteotomy. In two of my earlier cases the lower fragment of the bone was not rotated enough to entirely correct it. Figure 5 is a photograph of such a patient in plaster after operation. When this deformity exists in both hips, it is corrected in the two at the same time.

The operation for the dislocation in all of these cases has been done by the method previously described by me[1] and with the aid of the table designed for that purpose.

1. Hibbs, R. A.: An Original Method of Operating for Congenital Dislocation of the Hip, New York Med. Jour., April 25, 1908.

CONGENITAL DISLOCATION OF THE HIP

REDUCED BY MANIPULATION FOLLOWED BY ARTHROTOMY *

JAMES T. WATKINS, M.D.
SAN FRANCISCO

There has been considerable speculation as to what actually occurred when a congenital dislocation of the hip was reduced by the mechanical method. So far as my reading goes, no one has reported any attempt to determine by operative procedure whether the femoral head became directly applied to the acetabulum or remained separated from it by a fold of capsule. This paper records an attempt to solve this question.

My clinical experience with congenital dislocations of the hip has been sufficiently extensive. On the other hand, my opportunities to observe in detail pathologic anatomy have been meager.

Two specimens were seen at the clinic of the late Professor Hoffa; one was shown me by M. Redard; Dr. Bradford demonstrated for me, if I remember aright, three specimens from the Warren museum, and I made a necropsy on one several years ago for Dr. Sherman (a baby that had died of the measles).

Observing these, I had been able to verify what is common knowledge today of this condition, but found myself in much perplexity as to the changes brought about in the mutual relations of femoral head, capsule and acetabulum by the manipulative or mechanical reduction.

In the Hoffa specimens I noted a demifacet in the anterior rim of the acetabular roof. I regarded this as evidence in support of Lange's contention that the femoral head originally left the acetabulum by the anterior route. I noted also that the specimens from older children presented a ligamentum teres drawn out to the thinness of a thread, when it was not actually absent. It will be recalled that M. Redard, in discussing personal statistics of one thousand cases, calls attention to late-appearing deformations of the femoral head and neck in cases in which operation had been successfully performed by the mechanical method.

I felt that it would not be unreasonable to attribute this late-appearing distortion to defects of nutrition consequent on the occlusion of the artery in the ligamentum teres. I was unable to explain, however, the roughness which he and we here have noted in the floor of the acetabulum in certain of these cases. Possibly it is due to modified statics consequent on the changed shape of the femoral head.

The hour-glass constriction of the capsule was apparent in all cases in which the patient had walked, as was the forward twist of head and neck on the shaft.

One noted, too, that frequently there was a slight bowing of the neck with the concavity looking forward.

The changes in the muscles, the shortening of adductors and hamstrings, I had demonstrated clinically, but the lengthening of pelvitrochanterics, to which Lorenz had called attention, was not apparent, and until just recently did not seem particularly significant.

So much for a hasty review of the anatomy.

In 1903 I had assisted Dr. Sherman in operating on a patient on whom Professor Lorenz had previously performed a manipulative reduction. In this case it was found that the femoral head had ruptured the capsule and come to lie among the adductors of the thigh.

I pause to observe that I really believe Lorenz deliberately tried for an antero-internal transposition, because I can recall his first assistant Scholl telling us once in particular, after a mishap in which the patient went into sudden shock and there was reason to believe that one of the great vessels had been ruptured, that these accidents would not happen if the professor would content himself with a simple reduction and not try to displace the head internal to the acetabulum.

Fig. 1.—Right-sided congenital dislocation of the hip. Reduced by manipulation and subsequently verified by arthrotomy.

I believe that, at that time at least, Lorenz attributed the permanent stability of his reduction to the tension of his pelvitrochanterics, and that he attempted, therefore, by the maneuver described, to bring their origins and insertions nearest together during the period of immobilization. He also laid great stress on the stretching of the anterior capsule, though it is probable that he did not contemplate the rupture and escape of the head which actually occurred.

Again, Lange demonstrated by means of a series of roentgenograms, of which I had tracings, but which were lost in the great fire of 1906, that except where an exceptionally long neck was present, the so-called "frog position" was apt to put, not the femoral head, but the greater trochanter into or on the acetabulum.

Both he and Hoffa, who at that time was doing the open operation exclusively, immobilized in moderate abduction, full extension and internal rotation.

When I discussed this with Lorenz, he assured me that he had nothing to say against internal rotation provided one employed external rotation first.

The late Professor Panzeri of Milan employed abduction and an exaggerated internal rotation with knee flexed.

These were the observations, for the most part undigested, which I brought back from Europe with me. In view of them, first, and in view of the fact, secondly, that when I made the necropsy on Dr.

* Read before the Section on Orthopedic Surgery at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

Sherman's measles patient I did not think it mechanically possible to put the head by manipulation into the socket, and thirdly, because I found the capsular constriction exceedingly resistant even to a very sharp knife. I became convinced that it was not possible by manipulation to place the head in the acetabulum, cartilage to cartilage; and in this idea I remained for several years.

Last year I came across Dr. Ridlon's description of his technic. It sounded so easy that I thought I would try it as a preliminary to arthrotomy.

My opportunity came October 31 of last year, when I performed a manipulative reduction on a muscular little boy of 6 years and 3 months.

Without any great difficulty the head appeared to me to enter on rather than into the socket. My associate, however, was very sure that it was only on the posterior rim of the acetabulum.

Therefore, pending the test of the Roentgen ray, we immobilized the limb in abduction extension and internal rotation.

Then the little boy got sick and stayed sick, so that it was not until Jan. 30, 1915, that he came to the second operation.

Permit me here to interpolate from the clinical records my notes of Dec. 30, 1914, as well as those made at the time of operation.

Stereoscopic views were taken in two positions yesterday: (1) with thigh in the position in which it had been held in plaster of Paris, that is, in very marked abduction and inward rotation; (2) with thigh in diminished abduction and patella looking forward. It was agreed by all who studied the plates, Dr. Birtsch, Dr. McChesney and myself, that the head of the affected thigh was at the level of the acetabulum, and that the circle represented by the outline of the head and the circle of which the acetabulum formed an arc were concentric, but that the femoral head lay in a plane anterior to the acetabulum.

Fig. 2.—Bilateral congenital dislocation of the hip after attempted reduction by manipulation. The right had reluxated. The left was shown at operation to be within the capsule, but anterior to the bony part of the joint.

Physical examination gave a resistance beneath the femoral artery, but no undue fulness beneath Poupart's ligament, such as we see in frank anterior transpositions. There was no shortening; a false acetabulum was apparent above the site of the true one. The latter appeared to have a fair "roof."

January 30, 1915, under the strictest aseptic precautions the usual longitudinal incision between the tensor fasciae and sartorius was made, and the capsule opened. The capsule appeared to be adherent to the anterior aspect of the neck up to the junction of bone and cartilage. The head was in the acetabulum, from which it was easily luxated. Synovialis about head and capsule not adherent. No fold of capsule in front of head as latter had entered acetabulum. Ligamentum teres gone. Considerable fat in floor of acetabulum. Anteversion of head and neck not marked. Stability after reduction of dislocation excellent. Wound closed in usual way and immobilized in abduction and internal rotation.

June 14, 1915, cast off, stability good, walks with a sway but without a limp. To come back in December for inspection.

Subsequently a little girl, aged 4, appeared in my wards who had presented a bilateral congenital dislocation of the hip. These, however, had been the subject of attempts at mechanical reduction at another institution.

Here the stereoscopic pictures as well as the clinical findings seemed to show the right side in anterior transposition and on the left a frank reluxation.

An arthrotomy was therefore done on each side, using the anterior incision. On the left side reposition was easy, nor could one draw any conclusions as to the success or failure of the previous manipulation. On the right side the head was not out. In fact, because of the shrinkage which the pelvitrochanterics had undergone, it was only with difficulty dislocated. On the other hand, the dilatation of the anterior capsule had been so complete that the joint would appear to have lost the feature which kept the head pressed back into the socket when the limb went into hyperextension.

You will recall that the center of gravity of the body falls in a plane behind that in which lie the femoral heads. Therefore, in such a case during the maintenance of the erect posture, the head must be tilted forward, and sooner or later acquire a subspinous position.

Though not germane to this subject, I interpolate here that this child suffered a secondary hemorrhage on the left side two days after the operation. In stopping the hemorrhage there ensued a superficial infection, and in treating this a reluxation of the head on that side took place.

Finally, I would say I am not satisfied with this demonstration. It remains for one of us to approach the joint from the inner side, that is, behind the pectineus, then to incise the capsule longitudinally and actually see the femoral head peeping at us through the hourglass constriction. Next close the wound and do a mechanical reduction, and finally reopen the wound and see in what way the relation of head, capsule and acetabulum had become modified. Then we will cease speculation and actually know what we are talking about.

Personal Liberty and Infectious Diseases.—The right to restrict the social activities of persons suffering from, or exposed to, certain infectious diseases is today everywhere admitted. Possibly in future additional restraints will be imposed by the community on its infected members—though not necessarily without recompense to individuals—as the importance of checking certain infections becomes more widely recognized. The havoc wrought by Typhoid Mary is not unlike the damage done by a mad dervish running amuck with a naked knife in his hand. Why should the community expose itself to such exploits on the plea of maintaining personal liberty? There is no principle of personal right in such cases that must be maintained at all hazards. The question of expediency in each case must be the deciding factor. It is the right of the community to determine how far, at the moment, it is desirable to protect itself from hygienic evils. Restrictions on the carriers of disease germs, on the employers of labor, and on the drinkers of alcohol, are in themselves perfectly proper and to be judged on the basis of community welfare, not merely on the basis of individual pleasure, profit or convenience.—E. O. Jordan, Commemoration Volume, 1915.

STRUCTURAL CHANGES IN CONGENITAL HIP DISLOCATION *

WALLACE BLANCHARD, M.D.
Assistant Clinical Professor in Surgery (Orthopedic), Rush Medical College; Orthopedic Surgeon, Home for Destitute Crippled Children and University Hospital
CHICAGO

A diversity of forms of dismantlement and reconstruction are always shown in the roentgenographic presentation of a number of congenital hip dislocations taken before and several years after reduction. In every case the roentgenogram offers a suggestion as to the best position in which to place and hold the leg in the plaster-of-Paris spica in order to secure stability of the head of the femur and ultimately a good functionating joint.

In congenital hip dislocation, the obliteration of the acetabulum, the flattening of the head of the femur and the changing shape and direction of the neck are always shown in varying forms. When the mushroomed or cone-shaped head of the femur is placed and held approximately where the acetabulum once existed, the head usually again develops and cartilage grows up around it and deepens till, by a rebuilding process, a more or less functionally perfect joint is formed. The technic of bloodless reduction has steadily improved since the first visit of Professor Lorenz to this country in 1902. The forceful stretching method then employed, which frequently resulted in fracture of the femur without replacement, was superseded in 1904 by Prof. Albert Hoffa's milder manipulative reduction.

Some operators stretch every possible set of muscles and reduce over the superior or posterior rim of the acetabulum. Other operators, without preliminary muscle stretching, flex the hip and press strongly and continuously down on the knee till the head is pushed below the acetabulum, and then lift the head over the lower rim into position. The dangers of fracture or of other injury are largely decreased when the head is reduced over the more shallow lower rim. A reduction should not be accepted as satisfactory unless the head of the femur can be felt in the groin.

After the reduction, it is the position of the limb in the plaster-of-Paris spica that gives it stability or lets it go out. The roentgenogram usually gives a good indication of the position in which the leg should be held to secure stability.

If a small portion of the roof of the acetabulum is left so that it is shown in the roentgenogram even as large as a pea, a posterior dislocation may be reduced with a reasonable certainty that it will remain secure if the hip is firmly held in the Lorenz position of 90 degrees both in flexion and abduction.

The short unilateral plaster-of-Paris spica secures sufficient fixation for practical purposes of stability. The following case is presented to cover several points, including the opposing views of many European surgeons who agree with Bankart[1] that "a unilateral plaster is unsatisfactory as it does not fix the hip properly."

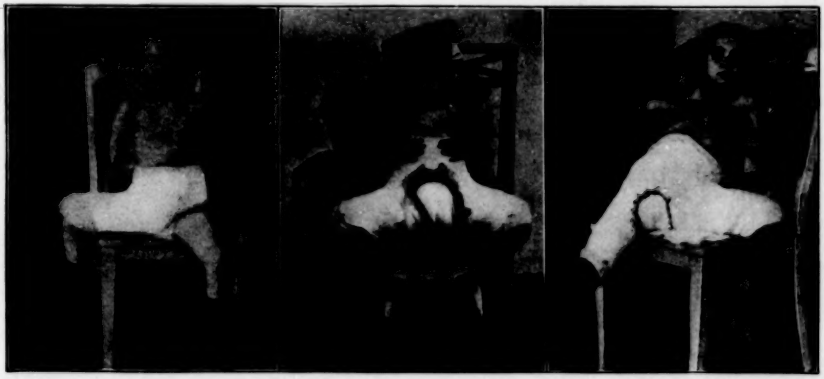


Fig. 1.—*A* (at left), B. J. (Case 1) in plaster-of-Paris spica after reduction of congenital hip dislocation. *B* (in center), R. G. (Case 2) in plaster soon after reduction. *C* (at right), H. F. (Case 3) in plaster soon after reduction.

CASE 1.—B. J., girl, aged 6 years, with a congenital dislocation backward of the right hip, and the leg 3.5 cm. short. The roentgenogram showed the acetabulum obliterated except for a small flat button that was left of the roof. The head was atrophied and mushroomed to half its normal size and thickness. The neck was shortened and elevated. The dislocation was reduced and the hip was placed in the position of 90 degrees flexion and abduction and put in the short unilateral spica, as shown in Figure 1 *A*. One month later the patient contracted diphtheria and, following the use of antitoxin, developed a dermatitis under the plaster spica necessitating its removal. Pneumonia followed the diphtheria, and after eight weeks without the plaster I found the head of the femur still in place. The rebuilding of the articulation had gone on without interruption. The plaster spica was renewed, and eight months after the reduction it was discontinued and the patient left to her own devices.

A roentgenogram (Fig. 2) taken soon after the removal of the spica showed a tilted pelvis of abduction with the head in place. A light strip between the head of the femur and the acetabulum indicates the space that is filled by the

* Read before the Section on Orthopedic Surgery at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

1. Bankart, A. S. B.: Treatment of Congenital Dislocation of the Hip, Brit. Med. Jour., 1913, i, 1044.

new acetabulum that is not yet sufficiently advanced in calcification to show in the picture, but is serving well for retention.

Walking for several months after the plaster spica has been removed with the leg in abduction has a double advantage of deepening the acetabulum and of keeping the head more securely in place.

A roentgenogram (Fig. 3) taken three years after reduction shows a new femoral head built up over the atrophied and

Fig. 2 (Case 1).—Roentgenogram taken soon after the removal of the plaster spica.

mushroomed head to the full size of the normal head, and above that a new acetabular roof shows dark and strong, and the hip is functionally good.

Case 2.—R. G., girl, aged 3½ years, with double congenital hip dislocation. A roentgenogram (Fig. 4) showed a double congenital hip dislocation with small buttons as the only remnants of the overhanging roofs. Reduction was made over the lower rim, and the hips put in plaster in the right angle flexion and abduction position.

A photograph (Fig. 1 *B*) was taken soon after the reduction. One month after the reduction the patient was reported dangerously ill with diphtheria, and following antitoxin a dermatitis developed under the plaster, which was removed. After four weeks without the plaster spica a roentgenogram

Fig. 3 (Case 1).—Three years after reduction.

was taken that showed both femoral heads to be in place. The legs remained in the "frog position," and a new plaster spica was applied.

The roentgenogram of this case showed small round buttons of bones as all that remained of the roofs. The visible remnants of the roofs were, of course, supported by considerable decalcified bone, and these formed buttresses against redislocations.

Case 3.—H. F., girl, aged 6 years, with left hip dislocated posteriorly and leg 3.5 cm. short. The reduction was too easy and no security was imparted to the head with the leg either in the primary position of Lorenz, or in the Lange position; but elevating the hip to 30 degrees above the Lorenz position toward Werndorff's axillary position imparted stability. A plaster spica was applied with the hip in this exaggerated position and left for eight months in the belief that the objections to so doing had not been sustained. The normal leg was included in the plaster as a counter lever to secure fixation, as shown in Figure 1 *C*. The plaster spica was removed after eight months and the patient left to her own devices. The leg was over a year coming down from abduction to normal position.

The roentgenogram (Fig. 5) taken soon after the removal of the plaster shows a tilted pelvis, decalcification of the upper end of the femur and the adjoining pelvic bone as well as a roughened outline at the original seat of the acetabulum. An irregular cavity marks the original site of the acetabular roof, which explains why the leg had to be elevated toward the axillary position to secure stability.

The second roentgenogram (Fig. 6), taken two years later, shows a recalcification of the lightened bones. Also a new roof shows the dark shadow of strength, and the head of the femur is in place. Even after three years there remained a slight suggestion of abduction, though the leg was functionally perfect.

Fig. 4 (Case 2).—Double congenital hip dislocation with small buttons as the only remnants of the roofs.

From three to five years may be taken as the age for reduction to get the best ultimate results. The increasing dismantlement of the unreduced hip joint as the child grows older and the insufficient ossification in younger children that allows soft bone to give way during and after reduction must be considered. The following case presents the two sides of the question:

Case 4.—M. H., girl, aged 2 years and 3 months, with congenital dislocation backward of the right hip, and the leg 3.3 cm. short. A roentgenogram (Fig. 7) taken before reduction showed that the right upper femoral shaft and neck had about one half the diameter of the left. The head of the femur had almost disappeared, and the overhanging shelf was nearly obliterated. A roentgenogram (Fig. 8), taken two and one-half years after reduction, showed a redevelopment of the upper femoral shaft, neck and head. Also the roof had reappeared dark and strong. But note the wide strip of light between the head of the femur and the nearest bone of the pelvis that indicates the situation of the soft reforming acetabulum and femoral head. Experience shows that weight bearing will cause this pliable acetabulum and head to give somewhat so as to produce some shortening before recalcification and ossification are sufficiently advanced

to afford a stable joint. The ultimate result is likely to show that the reduction was made too early, though at present the legs are the same length and function is perfect.

Changing the position of the leg after two and a half months in plaster, as is advised by Calot and others, interrupts the rebuilding of the articulation which is necessary to secure a stable joint.

The prognosis may be said to be favorable in posterior dislocation, unfavorable in forward dislocation and unfavorable in upward dislocation, if on rotation of the leg the head can be felt both anteriorly and posteriorly.

Bankart's[1] conclusion that "no operative method reaches the excellent results obtained by manipulative reduction" has been quite generally accepted. The elimination of unnecessary violence has marked every step forward in the reduction of congenital hip dislocation.

CONCLUSIONS

Experience seems to warrant the following conclusions:

A shortened or twisted neck in a coxa valga position may look unpromising in the roentgenogram, and yet present no bar to a good reduction and ultimately to a good functioning joint.

Fig. 5 (Case 3).—Soon after removal of the plaster.

Eight months is the shortest time in which a dependable acetabulum reforms, and any radical change in the position of the leg interrupts the rebuilding process. The unchanging pressure of the femoral head accelerates the absorption of the extraneous structures that obstruct the acetabulum. After the plaster spica has been removed, the child should be left to its own devices, and the longer the abduction remains, the more stable the joint will become.

The best functional result may be obtained in children from 3 to 5 years of age and with from 2.5 to 4 cm. of shortening. There is no age limit, upward. The older the child and the greater the shortening, the more secure the replacement, if it can be made. The difficulty of reduction increases with the shortening after 4 cm. have been passed. A reduction by steps can be gained in older children with 5 cm. or more of shortening by following the practice of the Vienna school. The head should be brought as near as possible to the acetabulum and put into a plaster spica just the same as if reduced, and a second attempt, made three weeks later, may result in a satisfactory replacement.

Reduction should be delayed in all cases of 3 years or younger and that show 2 cm. or less of shortening.

Fig. 6 (Case 3).—Two years after removal of the plaster.

The child needs all the freedom that can be safely accorded, and a great majority of unilateral cases will do best in unilateral plaster spica.

The reduction must be made at an age of susceptibility to diphtheria and other children's diseases, and the two cases here given show that if the plaster spica has been on a month or more and the roentgenogram reveals even a small remnant of the roof, the plaster may be left off one to two months with the patient on the bed without much danger of a redislocation.

If the roentgenogram shows delayed ossification from rickets or other causes, the reduction must be postponed. Roentgenographic observations of the hips should be taken before and after reduction and at frequent intervals so that a careful watch may be kept of the bone regeneration that produces a good joint.

Fig. 7 (Case 4).—Before reduction.

Perfect or satisfactory function may be obtained in a large majority of the unilateral and a fair proportion of the bilateral cases.

The case that looks the best may turn out the worst, and the reduced hip that feels the most stable may be the first to go out; but a careful roentgenographic study of each case will go far toward placing the reduction of congenital hip dislocation on a more assured basis.

15 East Washington Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HIBBS, WATKINS AND BLANCHARD

DR. JOHN RIDLON, Chicago: I believe that Dr. Hibbs' operation is wholly unnecessary. He was good enough to let me replace one hip after he had turned the thigh bone, as he showed you today. I was very anxious over the case and found it very difficult because things did not feel natural. I believe that the operation recommended by Dr. Watkins and done by Dr. Sherman yesterday is wholly unnecessary. I believe that there is a great deal less deformity about the head and neck of the femur than we have been accustomed to believe. Some hips are dislocated backward and upward, some are dislocated forward and upward, and some are dislocated directly upwards. We have talked about the twisting of the neck for years and years, and believed that existed. I do not know whether it does or not. Now we are told that it is not there, that it is in the shaft, but I do not know whether the shaft is twisted or not. We have believed that all these dislocated hops had "hour-glass" contraction, so that the head could not be tucked back through the narrow passage. I do not think they all have it; some of them may, and very likely some of them do have it. We have been taught that the sockets were all malformed and filled with fat, fibrous tissue, and the cotyloid ring had so narrowed that the head could only go to the opening of the socket and not into the socket. Now I am sure that is not so in some cases. I am sure that the main fault in most of these congenital hips is because of a defective and a shallow socket, and here is my evidence, in two pictures that I will pass: first, of a man, 52 years old, a policeman, 6 feet 4 inches tall, and tremendously broad and heavy, and he had never had a particle of trouble with his hips in his life. These pictures show that in one hip only two-thirds of the head is included in the socket, and in the other hip one-half of the head is included in the socket. Here is another picture with a socket no deeper than the palm of my hand. I replaced this hip several years before Lorenz came here. When the plaster was taken off, the hip appeared to be normally in place. I did not see the child again until several years afterward when the existing condition was found. She walked with scarcely a perceptible limp. I believe no man, whether he manipulates by my method or Lorenz' method or Davis' method or any other method, or cuts down on it by Hibbs' method or Sherman's method, will get a better socket than Hoffa used to get, and many of his slipped out.

Fig. 8 (Case 4).—Two and a half years after reduction.

However you operate, whatever your methods are, you will get, according to your skill, a certain percentage of good cases, and you will have a certain percentage of cases in which the hip slips out.

DR. LEONARD W. ELY, San Francisco: During the reading of these papers a thought has occurred to me which I think would be well to mention. In visiting one of the hospitals in the city here a few days ago I saw a patient who was to be operated on for congenital dislocation of the hip. The roentgenogram showed the dislocation. There was no wound on the leg, no history of any disturbance at all. The mother had simply brought the child in and left it on account of its failure to walk. I recognized the child as a patient I had treated several months before for arthritis. I had withdrawn a syringe full of pus from the hip. The arthritis slowly subsided without further treatment, leaving behind a typical dislocation of the hip, with no sign whatever of any operation, and I wondered how many of these cases that come to us in this walk of life are of the same kind.

DR. RUSSELL A. HIBBS, New York: There is one other point which I did not make in my paper. There must be some relation existing between the direction of the head and neck of the femur and the direction of the center of the acetabulum. It is quite possible in some cases that the amount of anteversion in normal femurs and in normal heads varies, and to meet that condition there must be a variation in the direction of the center of the acetabulum. It is obviously very difficult to determine that question.

DR. JAMES T. WATKINS, San Francisco: Among the procedures which we of the Children's Hospital staff have been employing of late years in the treatment of our congenital hip dislocations has been the subtrochanteric osteotomy which was first advocated by the late Professor Schede of Bonn as a means of correcting the forward twist of the upper end of the femur on the shaft. We differ from Dr. Hibbs in that we make the correction after reduction instead of before it, and attack the upper instead of the lower end of the shaft. Regarding the results of arthrotomy followed by osteotomy, our most careful estimate has given rather better than 70 per cent. of cures, which were both anatomically and functionally complete. Dr. Ridlon has lifted a great weight from my mind. If I understood him aright, one may reduce a congenital dislocation of the hip, and if God so wills it will stay reduced; otherwise it will not. Often in the still watches of the night I have worried lest imperfect results in my cases of congenital dislocation might be due to my own defects, and, humbly confessing my sins before God, I have sought diligently wherein I might do better. But now since I learn that not I but God did it, I feel better and shall sleep better.

DR. WALLACE BLANCHARD, Chicago: Wolf's law governs in dislocation of the hip and in the replacement of the head of the femur, the same as it governs and controls the breaking down and reconstruction of other parts of the body. The acetabulum distorts and flares out and the direction of the head and neck changes during the whole period of dislocation, but after replacement, the head builds up in the direction where the stress of weight bearing occurs and the overhanging shelf builds up where the stress of weight bearing must fall, and so Wolf's law governs and helps to replace the hip joint and make it something toward the normal.

Top Notchers and Thoroughness.—The third class are the top men, men who are careful, thorough and conscientious in their every relation to their patients and to their profession. There are more of them in Tennessee this year than there were last year, and there will be more next year than this. Their example is telling, and they all belong to their county medical societies. Had you noticed that?—Editorial, *Jour. Tennessee State Med. Assn.*, August, 1915.

THE SIGNIFICANCE OF THE FIXATION OF CERTAIN ABDOMINAL ORGANS IN THE HUMAN BODY *

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In studying the abdominal cavity from the standpoint of comparative anatomy we find that in man the capsule of the liver has fused with the diaphragm, while in the quadruped the liver is suspended by a mesentery the same as other organs. In man the duodenum is firmly fixed to the right abdominal wall, while in the quadruped it is freely movable. In man the ascending and descending colon and the two flexures are normally fixed to the posterior abdominal wall without the intervention of mesentery, while in quadrupeds the large intestine has a long mesentery and is therefore freely movable. In man the great omentum grows down over the transverse colon and adheres to it. This does not occur in the quadruped. In man the omental bursa is usually obliterated by adhesion of its layers together. Obliteration does not take place in the quadruped. In man the pancreas has been rotated behind the peritoneum and fixed to the abdominal wall. In quadrupeds the pancreas lies between the layers of the mesentery. In the monkey, which is a quadruped with a tendency to stand erect, the pancreas becomes adherent and the duodenum is more firmly fixed than in the original quadruped.

Going more into detail we find that in early fetal life, soon after the beginning of the formation of the alimentary canal, as it elongates, the duodenum, which at first has a mesentery or mesogastrium, turns over to the right carrying, with it the buds of the pancreas. The duodenum with its mesentery or mesogastrium lies down, so to speak, on the right posterior primitive parietal peritoneum and adheres to it. Thus the duodenum and pancreas become retroperitoneal and fixed. As the colon elongates the cecal end works its way upward and to the right and then down again, locating itself on the posterior and right lateral wall of the abdominal cavity, external to the kidney. The same position is assumed by the descending colon on the left side. At these points the ascending and descending colon and posterior layers of their mesenteries become adherent to the posterior parietal peritoneum, the endothelial surfaces of which become obliterated. Thus the ascending and descending colon not only fix themselves, but put in front of the kidneys the fibrous elements of two extra layers of peritoneum and the vascular and connective tissue structures of the mesenteries of these parts of the colon. The ascending and descending colon and their angles are not only fixed thus by adhesions, but are fixed on a shelf, having an angle of 51 degrees to the perpendicular. This leaves the transverse colon unsupported, except at the flexures and for its own mesentery, until the omentum grows down in front of it and attaches to it. This adds two more layers to its mesentery but does not give it any material support, owing to the fact that primarily the omentum is a sac and the transverse colon is only attached to the posterior layer. Later on, however, often not until nearly adult life, the omental bursa becomes obliterated up to the transverse colon, which gives the colon an extra support from the bottom of the stomach, in the form of a gastrocolic omentum. It is well to bear in mind that the gastrocolic omentum gives no support whatever to the colon until such peritoneal adhesion and consequent obliteration of the omental bursa takes place.

Unfortunately these adhesions do not always take place in man. Very rarely is it true that the duodenum and pancreas fail to adhere to the posterior abdominal wall. Occasionally the omental bursa completely fails to obliterate and permits the center of the transverse colon to swing from the flexure without the support of gastrocolic omentum, and occasionally this condition produces serious intestinal stasis. Occasionally the descending colon alone is not fused with the parietal peritoneum and produces, once in a great many cases, a unilateral left floating kidney. The relative infrequency of a left is probably due in a large measure to the costocolic ligament and the gastrosplenic omentum which hold the splenic flexure up much more firmly than the right is held. From 20 to 30 per cent. of human beings have an incomplete fusion of the cecum and ascending colon and its mesentery with the posterior parietal peritoneum. This deficient fusion is of several degrees.

First, the cecum and ascending colon alone may be mobile and very baggy and dilated, swinging from a hepatic flexure which is firmly fixed in its normal position. In a few of this type of cases a false membrane or veil has formed, known as Jackson's membrane. This type occurs so frequently and is so slightly mobile that it may be classed as normal.

In the second class of cases the colon has only partially migrated and has attached the hepatic flexure to the front surface of the kidney, leaving the cecum and ascending colon (while the patient is in the erect posture) swinging from the peritoneum on the front surface of the kidney. This peritoneal attachment has been described by Longyear as a distinct anatomic entity under the name of nephrocolic ligament. In some instances the weight of this baggy cecum dropping directly downward pulls the kidney out of position and produces the frequently seen right-side floating kidney. At other times the kidney holds its position, the pendulous colon swings from its attachment as a tube hung over a nail, producing an intermittent obstruction with consequent dilatation of the cecum and ascending colon, resulting in severe intestinal stasis, or the intestine may pull loose, leaving the kidney in its normal position while the hepatic flexure is mobile also. Some of these cases have become partially fixed by a Jackson's membrane.

In the third degree of nonmigration the hepatic flexure attaches to the front surface of the duodenum, when the pendulous baggy cecum with its fluid contents, especially in an individual who has become thin, at times pulls down so strongly on the duodenum as to kink the duodenum at the ligament of Treitz, and also at the junction of the first and second portion of the duodenum. Such a case shows a duodenal stasis with the Roentgen ray, the symptoms of gastric ulcer in the clinical history, and a dilated duodenum at the time of operation. We have seen such patients whose stomach symptoms were entirely relieved as soon as the cecum and ascending colon had been removed. We have seen other cases in which the same relief was obtained by fixation of the ascending colon and the first half of the transverse colon which makes the colectomy unnecessary.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

The fourth degree of nonfixation of the ascending colon is seen occasionally and is complete nonfusion in which neither the kidney nor duodenum has been covered by the mesocolon in which very extreme intestinal stasis existed which was relieved entirely by fixation operation by the method shown in the illustration.

In a certain per cent. of human beings there is a nonfixation of both the ascending and descending colon. These are the cases in which the so-called congenital type of enteroptosis occurs, in which both kidneys and all the hollow viscera tend to fall to the bottom of the abdomen, so that when the child reaches maturity the lower abdomen is dilated, the upper abdomen is contracted, the back is straight in an effort of the body to get in under this load and assume the carrying position. We contend that this typical picture of so-called congenital ptosis is due, in nearly all if not in all cases, to a deficient peritoneal fusion, and that the peculiar body formation is nature's effort to make the best of a bad job. It is in these cases of nonfusion that all floating kidneys occur. We have been carefully watching for four years and have not found a single case of floating kidney which was not proved on the operating table to accompany a deficient fusion of the ascending or descending colon. In other words, a floating kidney is entirely a secondary condition, which accounts for the fact that the operation for floating kidneys has been considered a failure by most surgeons.

Scheme of operation for anchoring the cecum and ascending colon and suspending the first half of the transverse colon by the great omentum, for a certain form of intestinal stasis.

What is the remedy for these defects? In cases of deficient fusion on both the right and left sides, resulting in ptosis with the characteristic body formation, surgery is usually not advised nor indicated. Forced feeding, thereby increasing intra-abdominal pressure, with exercises such as Goldthwaite and also Martin have recommended, will produce the best results. Occasionally the symptoms of a patient suffering from general ptosis are so severe as to require surgical procedure, in which case nothing short of the following operation will do permanent good, namely, the fixation of the ascending and descending colon and the two kidneys, through two separate posterior incisions as described later.

Second, the opening of the abdomen and making a complete partition in the abdominal cavity by stitching the omentum beyond the colon to the parietal peritoneum from one side to the other, thus making a water-tight partition, as we have had opportunity to see at a later operation.

After this operation has been completed the upper abdomen is expanded. Fortunately this very extensive operation is rarely necessary but if any surgery is attempted in the case of general ptosis with the body habitus described by Glenard and Goldthwaite, it is perfectly useless to do less. I have performed this complete operation for general ptosis six times with very satisfactory results, and with much improvement in the patient's health.

A right-side ptosis, however, calls for more frequent surgical interference. A right-side ptosis with a floating kidney accompanied by severe intestinal stasis, pain not relieved by dietary measures, admits of surgical treatment which consists first in making a posterior incision made just as if it were intended to remove the kidney and the first part of the ureter. Before the kidney is disturbed the peritoneum is opened, the appendix removed and the colon sutured to the parietal peritoneum. The peritoneal opening having been closed, the fat capsule of the kidney is opened, a door-flap hinge 1½ inches wide, of fibrous capsule of the kidney, is peeled off each side, a piece of the quadratus lumborum muscle as large as the middle finger is split off, two or three quilt chromic catgut sutures are passed through each flap of fibrous capsule, the two from the posterior flap are drawn around back of the separated strip of quadratus lumborum and tied to the corresponding sutures from the anterior, thus using the flaps of kidney capsule like a basket handle around the muscle. The posterior part of the fat capsule is now brought up through the same slit in the muscle and sutured to the front part of the capsule, thus making an additional basket handle of fat capsule.

There are also certain cases of severe intestinal stasis in which the kidney is not movable and in which the hepatic flexure may or may not be movable, giving severe pain in the right side or possibly dragging on the duodenum and producing symptoms of duodenal ulcer, but not relieved by any kind of dietary measures. Such a patient may be entirely relieved by suturing

the cecum and ascending and first half of the transverse colon by its omentum to the parietal peritoneum. This, the most frequent operation indicated in the dealing with all defects of peritoneal fusion, is performed as follows: A long right rectus incision is made to expose the entire length of the cecum and ascending colon. If any false bands or membranes have formed they should be cut and a series of purse-string sutures of very fine linen or silk passed but not tied, beginning at the cecum. Each purse-string suture should begin at the true parietal peritoneum to true peritoneum of the colon preferably including a small bight of a longitudinal band. Small bights of the intervening loose tissue should be included. These sutures should be placed every ½ to ¾ inch back toward the normal location of the kidney where the hepatic flexure is fixed. Then the intestine is turned forward and attached by its loose peritoneal connective tissue to the lateral peritoneum to within an inch of the incision and also near to the beginning of the omentum. At this stage of the operation the wall on the median side of the incision is lifted and the omentum sutured to the anterior parietal peritoneum from the median line backward to meet the other line of sutures. The omental sutures are of chromic catgut to avoid the danger of extension of a possible infection of the abdominal wound to the line of linen sutures which in two of my early cases kept up a discharging sinus for months until the linen sutures came out.

Occasionally a very severe case of constipation is due to the lack of obliteration of omental bursa, and cannot be cured by either dietary or medical means, but is entirely cured after suturing the omentum to the abdominal wall, thereby at once obliterating the omental bursa and holding up the middle of the transverse colon, which prevents the drag of a loaded transverse colon on the flexures.

CONCLUSIONS

1. Prenatal fixation of the pancreas, duodenum, ascending and descending colon and their mesenteries to the parietal peritoneum; of the liver to the diaphragm; of the omentum to the transverse colon; and the obliteration of the omental bursa, are evolutionary changes which help to fit man for the erect posture are not found in quadrupeds.

2. All cases of floating kidney with general visceroptosis are found in patients whose ascending and descending colon with mesenteries have failed to properly adhere to the parietal peritoneum. Surgical fixation of a floating kidney without fixing the colon is not based on sound surgical and anatomic principles; hence the failure of such operations in the past and necessity for surgical fixation of the colon at the same time.

3. Many cases of intestinal stasis are caused by the disturbed relations of the parts of the intestinal tract resulting from normal fixation of the ascending colon. While most of such cases are relieved by medical means, a few require surgical fixation.

Surgical fixation of the ascending colon should be extended to the suspension of first portion of the transverse colon by the omentum, for purpose of preventing harmful angulation at the hepatic flexure.

4. Some cases of persistent stomach trouble are due to the weight of a distended mobile cecum dragging on the third portion of the duodenum, and are relieved by anchoring the ascending colon and suspending the first half of the transverse colon.

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ABSTRACT OF DISCUSSION

DR. MAX EINHORN, New York: I am glad that Dr. Coffey does not commend these operations for enteroptosis. From my experience in enteroptosis, which extends probably over a period of twenty-seven years, I would say that I have not yet seen cases in which an operation was distinctly imperative. Enteroptosis, as such, does not demand surgical intervention. Enteroptosis itself is not of such great consequence nor does it interfere in such degree with the well being of the patients, and we can always do something to relieve them of their symptoms.

It is impossible to fasten each organ in the abdomen. I think we should take it for granted that, having developed from quadrupeds and assumed a standing position, nature probably in the course of the development has already accomplished what we require, and we do not need to worry about it at all or try to imitate those quadrupeds. I do not think they are any better off than we, so that if some organs are not entirely fixed in the abdomen that does not show that they are diseased or that we should change them. A flexible organ can sometimes do its function very well, and if we try to change it we sometimes do harm. That we should bear in mind when we want to interfere.

As to the medical treatment of enteroptosis there are symptoms sometimes requiring correction, and one should try to build up the patient. A great many of these patients with enteroptosis suffer from bad nutrition. They are afraid to eat, and owing to the lack of fat they have those symptoms. If we make them eat and support the abdomen (sometimes such a support is not urgent and they can do without it) we pull the organs up and they improve and we bring about a change in the position of those organs, especially where the enteroptosis has developed after some sickness; the loosening up of the abdominal muscles through this added fat will do wonders. If we build them up, with fat and muscles the organs very often go back of themselves to their natural positions. So in these simple means of nourishing a patient we have our ideal remedy at hand to cure a great many of these patients without surgical intervention.

DR. ALBERT GOLDSPOHN, Chicago: While the previous speaker was speaking there occurred to me what has frequently been a paradox to me in the feeding question, namely, if these patients do not eat there is something wrong about their gastro-intestinal apparatus causing lack of appetite or fear of the distress which they would afterward realize. Now, if they are to be permitted to walk about on two feet and not be compelled to go on four, how is the physician to succeed in getting them to eat? And if they are crowded to eat more than they want, is there a proportionate increase in digestion and assimilation following forced feeding?

We all operate for floating kidney rather infrequently. There is probably no operation that I do less frequently than that, and as Dr. Coffey has said, simply fixing the kidney and ignoring the colon, especially when this is done by various uses of the fibrous capsule alone or chiefly, is extremely uncertain in its duration and very unsatisfactory in its results. Dr. Longyear, in suggesting the connection between the kidney and the colon, and speaking of his nephrocolonic ligament, made a step which leads us to think of a possible cause for this dissatisfaction, but I, like many other men, have not been able to trace that ligament. I know, however, that there is a united descent between the kidney and the ascending colon; that the colon is dislocated with the kidney; and I knew that before I had learned of Dr. Coffey's explanation. The technic which I have resorted to, therefore, is chiefly that suggested by Dr. Edward Andrews of Chicago, which consists in making a hammock back of and beneath the kidney out of the fatty capsule and making use of the fibrous capsule only as an adjunct or incidentally. By drawing forward and upward the fatty capsule gathered together on both sides of the kidney, we raise the colon likewise if there is a connection between the two, and by fastening the capsule

like the meat in a sandwich, between the muscles in closing the wound by mattress sutures, we can make a fixed and permanent anchorage. This process in the operations that I have performed for floating kidney has been very satisfactory; and I think it coincides with the reasoning and the technic which Dr. Coffey suggests. I think it will be even better to do as he does: enter the abdomen from behind and laterally and anchor the colon and then do this work as he does it on the kidney.

Dr. A. N. Creadick, Portland, Ore.: Dr. Coffey's paper discussed one type of ptosis, namely, congenital, and not the acquired type such as we see in postpuerperal cases, with lost tone of the ventral abdominal wall, a flaccid lower abdomen and the resultant symptoms caused thereby. Let us lay down two or three simple rules for ptosis that will meet with common approval. First, ptosis is established when any supra-umbilical viscus is permanently and wholly below the level of the umbilicus, is then provocative of the usual course of symptoms and requires surgical intervention. No remedy can be applied to this type except the prostrate position or surgical procedure—some such operation as this devised by Dr. Coffey. Second, the "acquired ptosis" patients have some hope in medical treatment of their general asthenic state. The result of such medical treatment is very satisfactory in our hands. A large number of patients are relieved by medical treatment alone. Third, the factors which cause ptosis of the acquired type consist of (a) posture, the loss of the supporting shelf of the spinal column, which Dr. Coffey describes as an angle of 55 degrees from the horizontal; (b) the tone of the musculature of the ventral abdominal wall and (c) subperitoneal fat. In acquired ptosis the posture can be corrected by gymnastics, which also tone up the abdominal wall as well. (I use the frame devised by Dr. Martin of Chicago, elevating the foot to a window sill, securing an exaggerated Trendelenburg position, then requiring the patient to do regular leg exercises.) Hot compresses on the abdomen and forced feeding are useful.

Roentgenogram: *A*, carcinoma, pyloric end of stomach; *B*, duodenum; *G*, *B*, barium in gallbladder; *C*, barium in hepatic ducts.

Dr. H. O. Pantzer, Indianapolis: I proceed on a theory just the opposite of Dr. Coffey's. Instead of further fixing these organs for cure, I loosen all such angulations, kinks and distortions as interfere with function. In other words, in effect, I choose rather to reestablish the old quadruped condition. I may say that the clinical results are at least equally as satisfactory as those obtained by the fixation methods, which, too, in single cases, are not all we could wish for.

Dr. R. C. Coffey, Portland, Ore.: I never think of operating in these cases until the abdomen is black with blisters which the internist has produced with hot packs during forced-feeding process. The first thing is to have the internist try them out. My colleague Dr. Jones has an institution devoted to the forced feeding treatment. Occasionally there is a case that will not be relieved for mechanical reasons. I know an internist in my city who claims, like Dr. Einhorn, that he can cure them all, but I will say that many of the cases I get come through his hands.

A great many of our best surgeons are inclined to call everything general ptosis. Now Dr. Creadick spoke of acquired ptosis. There is the most definite ptosis seen in the abdomen. The ascending and descending colon have blended in perfectly with the parietal peritoneum and remain in normal position, but the stomach and the middle of the transverse colon have dropped down. This is the most troublesome type of ptosis. It has nothing to do with the subject of my paper and the majority are cured with fattening. Fattening will cure nearly all these cases by increasing the intra-abdominal pressure. The type we are discussing in the paper is an embryologic defect.

ROENTGEN OBSERVATION OF THE GALLBLADDER AND HEPATIC DUCTS AFTER PERFORATION INTO THE DUODENUM

R. D. Carman, M.D., Rochester, Minn.

The roentgenologic demonstration of a barium-filled gallbladder in a living patient is sufficiently unusual to warrant its report. So far as I am aware, no similar case confirmed by operation or necropsy has appeared in the Roentgen literature.

The patient, a woman aged 54, had had a cholecystostomy for gallstones in January of this year, elsewhere. She came to the Mayo Clinic May 22. In the scar of the operation wound were two sinuses, discharging pus, and surrounded by a movable, nodular mass. The total acidity was 4, all combined; no food remnants. Hemoglobin 80 per cent. The clinical symptoms consisted chiefly of some hunger distress, belching and watery regurgitation.

At the Roentgen examination no retention from the six-hour meal was found. When the stomach was filled with the second meal, the pyloric end showed a smooth, concentric filling defect, giving the lumen a conical form, and typical of scirrhous carcinoma. Far up in the right abdominal quadrant was a dense collection of barium with sprig-like branches (Fig. 1). From its situation this was believed to be in the gallbladder, indicating a communication between it and the upper intestinal tract, which was reported to the clinicians in charge of the case. The tendril-like branches were deemed to be due to the extension of barium into the hepatic ducts.

At operation (E. H. Beckman, June 28, 1915) the external sinuses were found to lead into a dense carcinomatous mass surrounding the gallbladder and involving the stomach. By reason of its extent the cancer was not exsectable. The gallbladder itself, which was excised, simply showed a chronic cholecystitis with particles of barium adherent to the mucosa. The fundus of the gallbladder communicated with the duodenum through a perforation.

At necropsy on the following day the perforation, which had been covered by the surgeon as well as possible, was found in the anterior wall of the first portion of the duodenum, toward the former site of the gallbladder. Metastases were noted in the liver. Some barium was seen in the hepatic ducts.

Cooperation.—Cooperating with an efficient health officer, physicians can make the efforts of the health department successful or their success impossible.—Trask.

New Instruments and Suggestions

A PRACTICAL OPERATING MASK

RICHMOND STEPHENS, M.D., NEW YORK

The variety of caps and masks in use for covering the heads and faces of doctors and nurses in an operating room indicates that the ideal head protection has not been devised. A mask or hood which completely covers the head is usually uncomfortable, while those that are comfortable do not protect the field of operation.

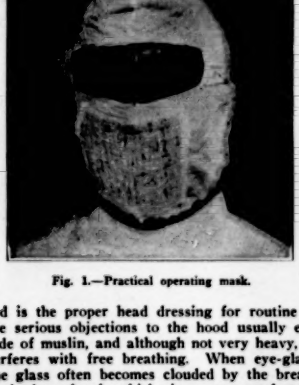


Fig. 1.—Practical operating mask.

A hood is the proper head dressing for routine use, but there are serious objections to the hood usually employed. It is made of muslin, and although not very heavy, is warm and interferes with free breathing. When eye-glasses are worn, the glass often becomes clouded by the breath. We have devised a hood which is more comfortable and satisfactory.

1. A gauze window about 4 inches square is inserted in the front over the mouth and nose. The window is made of two thicknesses of ordinary gauze.

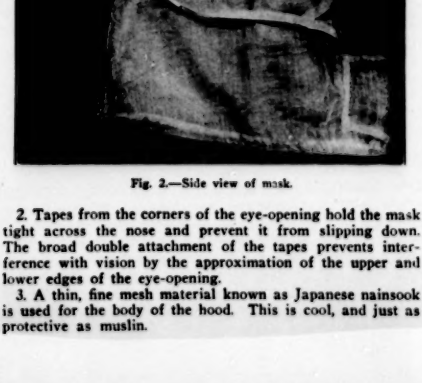


Fig. 2.—Side view of mask.

2. Tapes from the corners of the eye-opening hold the mask tight across the nose and prevent it from slipping down. The broad double attachment of the tapes prevents interference with vision by the approximation of the upper and lower edges of the eye-opening.

3. A thin, fine mesh material known as Japanese nainsook is used for the body of the hood. This is cool, and just as protective as muslin.

The size of the mask must vary somewhat for different individuals, yet a universal size may be employed which can be adjusted by means of the tapes to fit the head.

A draw-string is provided at the bottom of the mask to tie around the neck.

With reasonable care when coughing, talking, etc., it seems that the gauze is a sufficient filter of the air to protect the wound.

Second Surgical Division, New York Hospital.

AN EASILY FILLED CAPSULE FOR COLLECTING BLOOD

M. W. LYON, JR., PH.D., WASHINGTON, D. C.

The ordinary Wright capsule requires considerable skill in filling. The modified form illustrated here in sectional diagram can be readily filled by any one. Sufficient serum for a Wassermann test is more readily obtained than by venipuncture in the hands of one who is not expert in the latter procedure. The capsule is made by closing one end of a piece of glass tubing and drawing out the other to a capillary point and closing the capillary end. The air-tight tube is then held in the flame just below the origin of the capillary end until the heated and expanding air causes a bulging on one side, which finally ruptures with a "pop," leaving a small round hole. After this the capillary end should be broken open. In use, blood flows into the capillary end and trickles down the side to the bottom of the tube, the enclosed air passing out the hole in the side. The capsule is easily placed in a centrifuge and serum readily obtained without danger of breaking the tube.

Capsule for collecting blood.

Sterile blood can be obtained by placing the capsule in a plugged test tube and heating in the hot air sterilizer. The capillary end may be sealed in a flame after filling. Sterile cotton over the side hole will permit air to pass out and prevent entrance of germs, or the unsealed capsule may be returned to the sterile test tube.

In calling attention to this easily filled capsule I wish to disclaim originality, as its use was shown me by a student who said it was employed in a laboratory at Asheville, N. C. It does not seem to be described in books dealing with technic.

George Washington University.

AN IMPROVED STOMACH TUBE

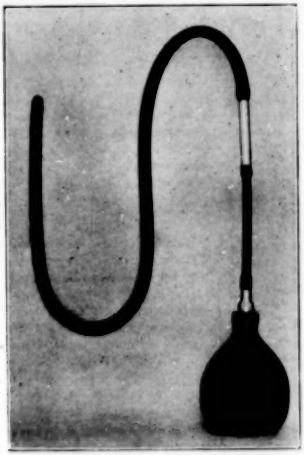
CHARLES D. AARON, SC.D. M.D., DETROIT
Professor of Gastro-Enterology, Detroit College of Medicine and Surgery

The tube is made of soft rubber, but, though readily flexible, is nevertheless rigid enough, owing to its size and the thickness of its walls, to avoid all danger of coiling or kinking in the pharynx or esophagus. It is 84 cm. (32 inches) long, rounded and solid at its lower end, with two lateral openings, one about 2 cm. (three-fourths inch) from the end, the other just above it on the opposite side. These openings run obliquely upward, and have no sharp edges; the edges have been smoothed away in molding (velvet-catheter eye), so that traumatism or other injury to the mucous membrane from contact is impossible. The openings are large, rendering aspiration of the stomach contents easy. The lower end is made solid so that no particles of food can accumulate there, as frequently occurs in tubes with a terminal culdesac. The main distinguishing feature of this stomach tube is that the closed, smooth, rounded end con-

tains a heavy piece of lead. This weighted end facilitates the passage of the tube down the esophagus without any effort on the part of the patient. Most patients regard the swallowing of a formidable-looking stomach tube as somewhat of an ordeal, but there is no need of swallowing or "gulping" when this tube is used.

METHOD OF PROCEDURE IN ASPIRATING THE STOMACH CONTENTS

The patient should sit upright, with his head bent slightly forward and held absolutely motionless. He is instructed to breathe slowly and regularly through the nose and to pay absolutely no attention to what is about to take place. The physician, standing in front of the patient, dips the free end of the tube in cold water and passes it directly to the posterior pharyngeal wall, which guides it downward toward the entrance of the esophagus. The weighted end carries the tube to the laryngopharyngeal opening, where it stops. A gentle push on the tube is now all that is necessary to carry it over the cricoid cartilage down the esophagus into the stomach, provided there is no obstruction in the esophagus. It is unnecessary to tell the patient to swallow, except in rare instances when the muscles of the neck contract spasmodically holding the tube tight. Many times the tube passes so quickly into the stomach that it is advisable to move it backward and forward to irritate the throat and induce gagging, which greatly assists the aspiration process.



Improved stomach tube.

Before passing the tube, I have the external end connected with an evacuating bulb by means of a short piece of glass tubing and a soft-rubber tube about 16 cm. (6 inches) in length. The bulb is then compressed, and a bend in the soft-rubber tube held with the thumb and finger of the left hand prevents it from filling with air. As soon as the tube reaches the stomach, the soft-rubber connecting tube is released, and the bulb, recovering its natural expanded form, aspirates sufficient gastric contents for analytic purposes.

Should lavage be desired, it can be readily and safely carried out with the tube and the evacuating bulb. The food residue in the stomach is aspirated as completely as possible with the empty bulb; the bulb is then detached, filled with water, reattached and slowly compressed until all the water has been introduced into the stomach. Then, by the mere act of releasing the pressure on the bulb, the water is withdrawn by aspiration from the stomach. This procedure is repeated with a second bulbful, and as often as may be necessary, until the water returns perfectly clear. It has been shown by Sawyer (Sawyer, John P.: Study of Methods of Lavage, Tr. Am. Gastro-Enterol. Assn., 1914, p. 146) that this method of lavage is far superior to any other.

When the tube is not in use it should never be coiled, but laid out straight. If this precaution is observed, the original shape of the tube will be maintained so that it will glide easily through the esophagus into the stomach as described.

38 West Adams Avenue.

A DIAGNOSTIC URETHRAL SOUND

FRANCIS J. W. MAGUIRE, B.S., M.D., DETROIT

This diagnostic sound is unlike the regular sound, since a short distance from the blunt point is an hour-glass-like constriction or neck (Fig. 1). A similar constriction of the sound's diameter is located on the straight portion of the instrument. The strictures are easily felt by the operator as the hollows of the sound slip by them or hug the elevated

Fig. 1.—The Maguire diagnostic sound for diagnosing single or multiple strictures of the male urethra. Depressions or "necks" on the sound cause abrupt jerks as they pass the cicatrices, giving the operator a complete survey of the urethra.

points (Fig. 2). Physicians with an "educated" tactile sense very soon become familiar with the jerky feeling, and with this instrument can tell the precise condition of the caliber of the entire urethral canal. The sound is an ideal one in cases

Fig. 2.—The instrument in situ. The posterior stricture is seen hugging a depression or neck in the sound.

in which the lumen is small and very sensitive, inasmuch as its construction permits the use of instruments of very small caliber. They are made at present in sizes 18, 21 and 24, French.

Team Work in Disease Prevention.—There is not a solitary line of preventive and constructive work in which we do not sooner or later run up against insufficiency of community work, of registration, of collaboration, and even of mere acquaintance of those who should work together. Over and over again we become guilty of the common mistake of giving to every good worker a bigger field than can possibly be covered.—Adolf Meyer.

Therapeutics

THE MORPHIN HABIT

With the enforcement of the Harrison Narcotic Law the number of morphin habitués will rapidly diminish. Illegitimate cases of this habit must soon either be cured or must become legitimate cases and sooner or later die of the disease on account of which the morphin is used. The morphin habit may be termed legitimate when it is acquired by patients who are suffering from an incurable painful disease. Such a habit may be life prolonging, e. g., in cancer where there is pain, and in heart disease where there is cardiac dyspnea, insomnia, etc. Incidentally, cases of morphinism will probably always occasionally occur, but they should become less and less frequent. Recurrent painful conditions should not be treated or prevented by morphin until every other resource has failed. No physician in general practice can honestly say that morphin should never be given for asthma, for cardiac dyspnea, and sometimes for terrible headaches, associated with uncontrollable vomiting. Of course, there is always danger that a few of such patients will ultimately acquire the morphin habit, and such patients will always furnish a small clientele for treatment to cure the habit. At the present time there is a considerable number of patients who have acquired the habit of self-drugging by obtaining morphin after their physicians have supposed them cured of their desire for it. Another group includes those who smoke or use opium. Such patients may be termed illegitimate morphin habitués. The following article will describe several methods for the treatment:

THE EFFECT OF MORPHIN ON THE SYSTEM

The primary effect of morphin is too well understood to require more than a brief reference: In the human being it stops pain; quiets the central nervous system, except in such patients as show an idiosyncrasy against it; causes sleep, if the dose is of fair size; inhibits all secretions, except at times that of the skin; slows up or inhibits digestion in the stomach; inhibits the peristalsis of the intestines, causing constipation; diminishes the absorption of nutritive or other fluids in the intestines; inhibits and hampers the activity of the liver, and soon of the pancreas; slows the heart; may increase blood pressure, unless the dose is a prostrating one, and of course slows the respiration. A small dose may stimulate the central nervous system, especially the spinal cord, may cause the individual to become more talkative, and may cause him to appear more active mentally, although his judgment is not improved and may be impaired, as well as his self-control. Sexual stimulation may occur, and peripheral irritations may be ignored. This action of small doses is what frequently occurs in morphin habitués when they take their ordinary dose. In other words, the ordinary dose for them acts as a small dose for the individual who is not used to the drug.

The patient who is not used to morphin may have nausea, vomiting, faintness, cardiac depression and subnormal temperature when the effects of an ordinary large dose are passing off. The habitual user of morphin becomes nervous, irritable, depressed, is unable to concentrate for any physical or mental work, often has no appetite, may have loose bowels, and may have various other nervous disturbances such as an irregularly acting heart, cold, clammy hands, cough, hiccup, nausea, and various peripheral pains, all depending on the length of time he has gone without the drug.

A considerable part of the drug is destroyed in the body by oxidation, probably in the liver and tissues; some is excreted with the urine, but a portion is excreted through the mucous membrane into the stomach and intestines, from which organs a part may be again absorbed. Excretion commences soon after the ingestion of the drug, but continues for hours and sometimes for days after the last dose has been taken, if the patient has had several doses, or is a habitué.

SYMPTOMS OF CHRONIC MORPHINISM

The morphin habitué may take his drug by inhaling the smoke from burning opium, or by taking it by the mouth, or by hypodermic injection. The use of the hypodermic syringe has become more and more frequent in these patients, as they get the action of the morphin much more quickly by this method, and they have found that it does not so much upset the stomach and digestion. The effect of the habitual use of morphin is primarily an insatiable desire for more and more frequent doses and for larger doses, in order for the individual to receive the same stimulation and the same sensations of comfort. Sooner or later there is a weakening of the moral character so that the statements of the individual are entirely unreliable, and even when not directly under the influence of the drug he will not only tell plausible untruths, but also may relate peculiar and interesting stories of events that never occurred. Later there is a weakening of the mentality, and absence of all desire for exertion, either mental or physical; the patient becomes irritable, is muscularly weak, and may show some tremors; the heart may act irregularly and become feeble; there is more or less impairment of digestion, with more or less concentrated urine, often showing bile and indican, and the mouth and skin may show a low grade of jaundice. In other words, the patient is suffering a chronic toxemia from the action of the drug, morphin.

If the dose of the drug is diminished or withdrawn the patient not only suffers the symptoms described above, but the pains may become almost intolerable, there is absolute insomnia, and the nervous irritability, excitement, and sometimes almost delirium may be succeeded by such a depression of spirits as to simulate melancholia. Consequently, the treatment of the real morphin habit is always a serious proposition. Patients may die while taking the treatment for the cure of their habit. This does not mean that it is difficult to withdraw the drug gradually and completely, without the patient's knowledge, when it has been given temporarily for a short period to an acutely sick patient. This can easily be done by the careful physician almost without the patient's knowledge, either by a gradual withdrawal of the drug or by substituting temporarily some other narcotic or hypnotic.

While there is not now the danger of writing a prescription containing opium, morphin, codein or heroin, lest it be repeated by the patient unknown to the physician, that there was before the Harrison law went into effect, still it is usually unwise for the patient to know that he is receiving a narcotic of this series. The physician may give personally to the patient the dose of the drug that he is to use.

METHODS OF TREATMENT

The choice of the method of treatment for the morphin habit is of great importance. The treatment

which will cure the habit most quickly, which is the least dangerous, and which will afford the patient the greatest comfort during the period of his craving for the morphin should be the one of choice. This is not to declare that there may not be several treatments, varying slightly in their application, that may fill these requirements.

The treatment of an individual addicted to the use of opium or morphin should not be attempted unless the physician is certain that the patient is absolutely under his care and that his directions will be carried out in the minutest detail. With a reliable nurse, treatment may be attempted in a patient's home, but it is not often advisable. If a patient is to be treated at home, the physician should remember that he may become delirious, not only from the withdrawal of the morphin, but from any one of the atropin treatments, and that he might injure himself, or might jump out of a window in order to escape and obtain, if possible, what he thinks he needs. Also, the convalescence of these patients, like hysteria, is better treated at an institution. In fact, it should be stated that generally better results are obtained in an institution for the treatment of this habit, or in a public or private hospital. The physician should exercise the greatest patience, and should show that he has sympathy for his patient during his mental and physical trial. At the same time the physician should be firm in carrying out the details of the treatment. He should also in every way encourage the patient to exercise his own willpower in controlling the symptoms, and later in refraining from the use of the drug.

SOME OF THE SPECIAL TREATMENTS OF THE MORPHIN HABIT

1. *The Towns-Lambert Treatment.*—Mr. Charles B. Towns, a layman, discovered and offered a treatment for the morphin and alcohol habit in 1904, at which time, however, he did not explain the ingredients of the preparation that he used. Later, in 1909, he did explain this treatment to Dr. Alexander Lambert of New York, who tried it, and described it in THE JOURNAL, Sept. 25, 1909. Subsequent articles have been published by Lambert and others. The treatment consists of the administration of mercury in the form of compound cathartic pills, and of blue mass, to produce free catharsis and relieve the congestion and inactivity of the liver. The other medicinal treatment is a mixture as follows:

℞	Tincture of belladonna.....	2 fluidrams
	Fluidextract of xanthoxylum.....	
	Fluidextract of hyoscyamus...each	1 fluidounce

Mix.

A 15 per cent. tincture of belladonna should be used, not the official 10 per cent. tincture.

2. *The Pettey Treatment.*—Dr. George E. Pettey (of Memphis, Tenn.) also causes catharsis, and has the patient drink large amounts of water to dilute the body fluids, and to cause watery movements and a large amount of urine. He gives his patient tub and vapor baths. His cathartic combination is as follows:

℞	Calomel	
	Powdered extract of cascara sagrada ..... each	10 grains
	Ipecac	1 grain
	Strychnin nitrate.....	¼ grain
	Atropin sulphate.....	1/50 grain

Mix, and make 4 capsules.

His other medicinal treatment is scopolamin in 1/200-grain doses, spartein sulphate in 2-grain doses, and during the scopolamin treatment 20 grains of sodium thiosulphate every two hours for twenty-four hours or more.

3. *The Sceleth Treatment.*—This treatment is advocated by Dr. Charles E. Sceleth, who is medical superintendent of the Sceleth Emergency Hospital and of the Hospital of the House of Correction in Chicago. In these institutions the majority of the cases of drug addiction in Chicago are treated. The treatment (THE JOURNAL, March 13, 1915, p. 927) consists of saline cathartics and the following combination:

℞	Scopolamin hydrobromid.....	1/100 grain
	Pilocarpin hydrobromid.....	1/12 grain
	Ethyl-morphin hydrochlorid.....	½ grain
	Fluidextract cascara sagrada.....	15 minims
	Alcohol	35 minims
	Water .....q. s. ad	1 fluidram

The dose of the foregoing is varied according to the amount of morphin taken.

All final treatments of the convalescence must aim to build up the physical condition, occupy the mind of the patient, and stimulate and encourage his self-control.

THE OBJECTS OF TREATMENT

The objects aimed at in the treatment of the morphin habit are: to eliminate the morphin that may be left over in different parts of the body; to stimulate the activity of all glands, and especially the liver; to combat the narcotic by a physiologic antidote; while these objects are kept in view, to give the patient as much rest as possible, and to stimulate and support the heart and the circulation.

Severe prostration must occur with almost any successful treatment. The strongest opponent to chronic morphin poisoning is atropin in some form. The Towns-Lambert treatment contains belladonna, which contains atropin, and hyoscyamus which contains atropin as well as scopolamin. The Pettey treatment contains atropin and scopolamin. The Sceleth treatment contains scopolamin. Thus, each of these three treatments combats morphin with atropin, reduces the intake of morphin more or less rapidly, and in the meantime causes catharsis, practically to the limit of tolerance. Just why these particular combinations should be more successful than any other combination, or than atropin given hypodermatically, is a question for careful investigation by those who are in charge of institutions for the treatment of morphinism.

The exact physiologic activities of the drugs used are as follows:

Tincture of Belladonna. — This has no activity except that of atropin, and atropin stimulates the respiratory center, accelerates the heart, causes more or less contraction of the blood vessels, may raise the blood pressure, wakes up the brain, dries up all secretions, may cause flushing of the face, may cause parched lips and throat, dilates the pupils, and in poisonous doses causes serious tachycardia and respiratory paralysis.

Fluidextract of Xanthoxylum—Xanthoxylum is a drug which is so little used and has so little standing that it is not mentioned by some of the best books on materia medica. Others which mention this preparation state that it is seldom prescribed. The only official preparation is the fluidextract.

Xanthoxylum (prickly ash) contains a volatile oil which is irritant. Since prickly ash was first used as a drug it has been recommended for various conditions, but has not been proved to have any special activity.

It probably has some laxative properties, and may in small doses be a stomachic stimulant, while in large doses it would cause irritation of the stomach. Any diuretic, circulatory, or expectorant action, or any action on the nervous system is very doubtful. The question naturally arises, scientifically, if this drug in the Towns-Lambert mixture could not be replaced by some more rational preparation. In other words, it is not evident just why this atropin mixture is better when combined with prickly ash. One might almost wonder if xanthoxylum had not the same bearing in the mixture that the zodiacal sign over the Latin ℞ at the beginning of the prescription is supposed to have — an invocation to the gods that the prescription will do good.

Fluidextract of Hyoscyamus.—Hyoscyamus (henbane) contains hyoscyamin, scopolamin and a small amount of atropin. Hyoscyamin and scopolamin are really atropins, and act more or less like atropin, with the following exceptions: Hyoscyamin, which is probably always more or less contaminated with atropin, is nearly twice as strong as atropin in its ability to paralyze peripheral mechanisms. While scopolamin resembles atropin in its action, it acts as a hypnotic, unless the patient has an idiosyncrasy against all atropins, when it will cause excitation and delirium. Scopolamin acts more strongly on the peripheral nerves than does atropin. Hyoscyamin can readily cause severe prostration. In large doses scopolamin can also cause severe prostration and collapse. The fluidextract of hyoscyamus contains only 0.075 per cent. of alkaloids. The dose is 0.2 c.c. (3 minims).

It will thus be seen that the action of the fluidextract of hyoscyamus, added to the action of the tincture of belladonna, will simply intensify the action of belladonna, with possibly a slight sedative effect from the very small amount of scopolamin contained in the fluidextract of hyoscyamus. Why, then, give both hyoscyamus and belladonna?

Compound Cathartic Pill.—It should be recalled that the compound cathartic pill which enters so largely into the Towns-Lambert treatment contains a mixture of cathartics, namely, colocynth, aloes, scammony, calomel, jalap and camboge. The united effect of these cathartics, especially when given in the large doses recommended and combined with blue mass, is very free purging. This causes a depletion of the portal system, a lessening of liver congestion, an increased excretion of more or less toxic bile, and secondarily a great relief to the kidneys, on account of less toxins being absorbed from the intestines, which must later be passed off by the kidneys. There can be no doubt also that such brisk, free purging must cause a purer blood, and one that is better able to remove toxins and the products of sluggish metabolism from all parts of the body, especially from the nervous system, in these morphin patients.

Once more let it be said that there is no peculiar, wonderful action in the old and ancient compound cathartic pill. It is quite probable that any other method which would thoroughly relieve the intestines and at the same time increase the excretion of bile would have the same beneficial effect.

Pettey's purgative combination consists of calomel, cascara sagrada, ipecac, strychnin and atropin. The action of these drugs is sufficiently understood to require no further elucidation. Ipecac will increase all secretions more or less, perhaps especially the intestinal secretions. The addition of atropin to the purgative prescription might be questioned, except that it is a fact that every successful treatment seems to require something of the atropin series. Also, atropin is known to stop the griping of cathartics by dulling the peripheral nerves and preventing intestinal spasm. On the other hand, the strychnin will increase normal intestinal peristalsis, which in morphin takers has become more or less decreased. The above-mentioned cathartic is aided later by castor oil or magnesium citrate. This cathartic treatment emphasizes the fact that catharsis is what is needed, and not necessarily any particular one or more cathartic drugs. Scopolamin and strychnin are added to his treatment.

Sodium Thiosulphas (Sodium Hyposulphite).—This is largely used externally, rarely internally, and has been used as a food preservative. There is no doubt that some other drug would serve Pettey's purpose as well, especially as this drug has not been shown to have any special beneficial physiologic activity.

Spartein.—This is a liquid alkaloid obtained from the broom plant, scoparius, and has been used in medicine in the form of crystalline salt, spartein sulphate. It is a nervous depressant, and especially a motor paralyzant. Earlier experimentation seemed to show that spartein could raise the arterial pressure as well as quicken the pulse rate. Clinically, however, it has been found that in small doses it has little or no action, and in large doses it may cause circulatory depression. It has been largely used in irregular or intermittent heart and in palpitation, but it has not stood careful clinical or hospital tests, and is now very rarely used in cardiac depression.

Sceleth combines the laxative cascara sagrada with his scopolamin, pilocarpin and ethyl-morphin hydrochlorid treatment.

Pilocarpin.—This is an antagonist to scopolamin, as it promotes all secretions, especially the secretion of the saliva, of the bronchial mucous membrane, and of the sweat. It also acts against the atropin series in causing contraction of the pupils. Unlike the atropins, it is never stimulant, is always depressant, and the secondary effect is that of prostration. A single dose of the pilocarpin salt, as the hydrochlorid, nitrate, and hydrobromid, is about .01 gram, or ⅙ of a grain.

Ethyl-Morphin Hydrochlorid (Dionin).—This is the hydrochlorid of ethyl ester of morphin, that is, a morphin derivative, and the action is more or less closely like that of morphin, with a possibility that its secondary effects are more depressant. Sceleth in his treatment also uses strychnin.

These three treatments are all atropin treatments, with free purging, and the more or less gradual withdrawal of the drug, with a subsequent building up of the general system and a development in the patient of self-control.

The drugs used in these systems of treatment are not here criticized from an unfriendly standpoint, but to stimulate, if possible, a more careful study of the condition of morphinism in institutions that do not blindly follow one orthodox method. There is no halo, and there is no zodiacal sign, and there is no one prayer, that necessarily accompanies these particular combinations of drugs. It is largely the forcefulness of the men who carry out the treatment and the persistency in obtaining the object aimed at through some antagonistic drugs, profuse purging, and support of the patient through his trial.

(To be continued)

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SATURDAY, NOVEMBER 20, 1915

STUDIES OF PELLAGRA

The zeist theory of the origin of pellagra is not yet entirely abandoned, and some students of the subject are still endeavoring to connect the incidence of pellagra with some factor related to maize, or Indian corn, in the diet. At the present moment, however, a greater interest centers in the broader hypothesis that pellagra is due to some communicable factor and should be placed in the category related to that of infectious disease. The Thompson-McFadden Pellagra Commission[1] has stated that its efforts to discover the essential pellagra-producing food or the essential pellagra-preventing food have not been crowned with success. Their evidence suggests that neither substance exists in the population studied by them. Hence they have been inclined to postulate a communicable agency in the etiology of pellagra.

Within a few days, Goldberger of the U. S. Public Health Service and his associates have announced the experimental causation of pellagra in a group of human beings, as well as the cure and prevention of the disease among three groups of persons widely separated from each other geographically.[2] As a result of epidemiologic studies, Goldberger had concluded in effect that pellagra is not a communicable disease, that it is dependent on some as yet undetermined fault in a diet in which the animal or leguminous vegetable component is disproportionately large, and that no pellagra develops in those who consume a mixed well-balanced and varied diet.[3] Having already observed the benefits of dietary treatment prescribed by Lorenz and others,[4] Goldberger and his associates began a series of feeding experiments to confirm their epidemiologic findings.

1. Siler, J. F.; Garrison, P. E., and McNeal, W. J.: Further Studies of the Thompson-McFadden Pellagra Commission, a Summary of the Second Progress Report, The Journal A. M. A., Sept. 25, 1914, p. 1090.
2. Goldberger, Joseph; Waring, C. H., and Willets, D. G.: The Prevention of Pellagra: A Test of Diet Among Institutional Inmates, Pub. Health Rep., Oct. 22, 1915, p. 3117. Goldberger, Joseph, and Wheeler, G. A.: Experimental Pellagra in the Human Subject Brought About by a Restricted Diet, ibid., Nov. 12, 1915, p. 3336.
3. Goldberger, Joseph; Waring, C. H., and Willets, D. G.: The Treatment and Prevention of Pellagra, Pub. Health Rep., Oct. 23, 1914, p. 2821.
4. Lorenz, W. F.: The Treatment of Pellagra: Clinical Notes on Pellagrins Receiving an Excessive Diet, Pub. Health Rep., Sept. 11, 1914, p. 2357.

The first series of these to cure and prevent pellagra were undertaken at two orphanages in southern Mississippi. During the spring and summer and up to September 15, 1914, there had occurred at one of these institutions seventy-nine cases of the disease among a total population of about 200 inmates and employees, and at the other 130 cases among a total of about 220 inmates and employees. September 15, the diet at both institutions was supplemented by a very decided increase in the proportion of the fresh animal and leguminous protein foods. This increased diet has been continued to date, a period of about fourteen months. Of these cases, sixty-seven in the first institution and 105 in the second institution were continued under observation by the investigators for more than one year, and in only one case was there evidence of the recurrence of the disease, following the change in diet mentioned. Among the residents of these orphanages who had not had pellagra in 1914, a total of ninety-nine and sixty-nine, respectively, none developed the disease subsequently. In other words, in these two institutions, with a total population of approximately 420, almost 50 per cent. of whom had pellagra in 1914, the disease entirely disappeared, following the use of the supplemented diet, and in only one case has there been a recurrence.

In the second experiment, undertaken in December, 1914, in the Georgia State Sanitarium, about forty white and forty colored insane adults who had had pellagra in 1914 were placed in separate wards, and the diet supplemented, and special care taken in supervising the feeding. At the beginning, many of these patients presented "marked residuals" of their attacks. Of the pellagrins mentioned, seventy-two have remained under observation to date. Of the thirty-six colored patients, eight had given histories of at least two annual attacks, and of the thirty-six white patients, ten had given histories of at least two annual attacks. None of the seventy-two patients have had recurrence this year. During the same period, not less than fifteen of thirty-two control female pellagrins developed recurrences. In all the institutions, except for diet, the hygienic and sanitary conditions were unchanged. From these experiments, it is evident that pellagra has not only been cured but also prevented by means of appropriate diet.

In order to test further the relation of diet to pellagra, however, Goldberger and Wheeler[2] undertook to produce the disease among convicts who had volunteered for this experiment on promise of a pardon. The experiment was carried on at an isolated convict camp at which, beside the twelve volunteers, there were about seventy controls, twenty of whom were kept under special medical surveillance throughout the period of the experiment, that is, from Feb. 4 to Oct. 31, 1915. There had been no history of pellagra at this camp. These volunteers were strictly segre-

gated and kept under guard night and day. From February 14 to April 19 no change of diet was made, and on careful routine examination, no evidences of pellagra were detected. At noon on the latter date, the diet was changed, the quantities of the different articles of food comprising it during a sample week (August 2-8) being as follows:

Biscuits, 41.81 pounds; corn bread, 24.56 pounds; grits, 27.06 pounds; rice, 24.25 pounds; fried mush, 33.87 pounds; brown gravy, 37.81 pounds; sweet potatoes, 23.62 pounds; cabbage, 4.25 pounds; collards, 23.75 pounds; cane syrup, 5.94 pounds, making a total of 255.67 pounds of food consumed during the week, or 3.32 pounds per man per day, having a caloric value of 2,952 calories per man per day. The sugar was white granulated, the syrup a "homemade" cane syrup. No vegetable fats entered into the diet. The corn meal and grits were of the best quality obtainable in the local market and the same as used at one of the orphanages ("M. J."), Jackson, Miss., at which a feeding experiment to prevent pellagra was conducted and at which no pellagra occurred this year.

The general sanitary environment of the volunteers and controls was the same, but the personal cleanliness and freedom from insects and vermin were in favor of the volunteers. Of eleven volunteers who completed the experiment (one was released because of prostatitis), six developed symptoms, including a "typical" dermatitis justifying a diagnosis of pellagra. The nervous and gastro-intestinal symptoms were mild, but distinct. In all six, the skin manifestations were first detected on the scrotum, in two subsequently on the backs of the hands, and one on the back of the neck.

These positive experiments demonstrate that pellagra is a nutritional disease, but they do not single out any particular article of food. From these studies, and observations in other places, it is unlikely that any single article of food will be incriminated, for the "grits" which entered into the diet of the convicts who developed pellagra also entered into the diet of the children of one of the orphanages who entirely escaped the disease. Moreover, in Nairobi, where 119 cases have been reported, no maize had been raised, and "none had ever been brought into the country."

A statistician of the Public Health Service[5] has suggested a possible relation of the incidence of pellagra to certain conditions of an economic character. His industrial investigations show that the lower the economic status of the white American family, the greater is the pressure for sacrifices in diet, particularly in animal protein foods, since these are the most expensive. The economic status of wage earners' families in the Southern states, particularly of cotton mill families, is lower than that of wage earners' families in other sections of the country. Certain factors have tended to restrict the supply of protein foods in southern industrial localities that do not restrict, at least to the same extent, the supply of carbohydrates and fat. Budgetary studies of a large number of native white wage earners' families, generally comparable as to family income and size, indicate that the proportion of proteins in the diet of southern families is considerably less, and of carbohydrates and fat considerably greater than in the diet of northern families. Certain factors have tended to intensify this condition in recent years, particularly since the industrial depression began in the latter part of 1907. While the supply of a better balanced diet in southern industrial localities has apparently not been improved materially, the economic status of wage earners' families, especially in the cotton goods and lumber industries, has been lowered, and retail prices of foods have greatly increased, this increase being more pronounced, particularly since 1907, than in other sections of the country. The increase in retail food prices has been at least 40 per cent. higher for proteins than for carbohydrates or fat. The available data thus point to a lessened financial ability of southern wage earners' families to provide a properly balanced diet, as well as a decrease in the availability (measured by retail prices) of an animal protein food supply for the wage working population, particularly since about 1907 or 1908. Incidentally they tend to support the view that pellagra may be a deficiency disease, as are beriberi and scurvy, which have so often been discussed in relation to it.

It remains, therefore, to determine by further dietary and laboratory studies, which will of necessity be of a highly technical nature, the deficient or disproportionate elements in diet responsible for this disease. Judging by the advancements recently made, the problem will be eventually solved. In the meantime, there is available a practical means of prevention and cure, and to Goldberger and his associates great credit is due for their work. In view of the increasing prevalence of pellagra, and the fact that over 7,500 people in the United States will die of the disease during the present calendar year, the value of their studies from both public health and economic standpoints may be compared to those of the discovery of the relation of diet to beriberi, or the mosquito to the transmission of yellow fever.

5. Sydenstricker, Edgar: The Prevalence of Pellagra: Its Possible Relation to the Rise in the Cost of Food, Pub. Health Rep., Oct. 22, 1915, p. 3132.

TOBACCO AND THE HEART

The question of the effects of tobacco on the heart is an old one, and has often been discussed. The phrase "tobacco heart" has become a commonplace not only with the profession but also with the laity. Yet the amount of accurate information on this subject is still meager. This is not surprising, however, for all investigations have at least this in common: they show what a great number and variety of factors may be involved. There is indubitable evidence that the use of tobacco causes changes in the caliber of the blood

vessels; there may be a constriction or a dilatation. The former, leading to a rise of blood pressure, is the more characteristic effect. Changes in the blood vessels react on the heart. It is widely held by clinicians that nicotin (and the effects of tobacco are probably chiefly nicotin effects) has a special action on the coronary arteries; to this is usually attributed the anginalike attacks frequently seen in excessive smokers. Sensory disturbances of obscure origin, but referred to the heart, are among the most pronounced symptoms of the "tobacco heart."

Recently, special attention has been devoted to the disturbances of the rhythm of the heart, use being made of the newer methods of studying these to which attention was recently called.[1] Such studies have been made on both man and the lower animals. The latter studies are in some respects of special importance, for it is only under experimental conditions, which can be controlled, that results capable of clear interpretation can be expected in such complex conditions as are evidently present. Although in animal experiments extreme, obviously "toxic," effects are frequently studied, effects which can rarely be anticipated in man, the fundamental and possible actions of a drug are often most clearly seen in such experiments. It is unsafe, however, to predict that what seem to be extreme conditions in animal experiments will not be found in man. An interesting illustration of this is seen in the discovery of the condition of auricular fibrillation now recognized as of very frequent occurrence in heart disease. Fibrillation of the auricles was produced in dogs by Cushny, and its effects on the pulse described; Cushny and Edmunds described a case in man in which a very similar pulse occurred, and suggested that in man, too, auricular fibrillation may occur—a suggestion received with incredulity, but soon found to be amply justified.

It has long been known that nicotin acts on the heart chiefly through the nerves, the vagus and the sympathetic or accelerators. The chief action is exerted on the ganglion cells interposed in the course of these nerves between the central nervous system and their endings in the heart. These ganglion cells, like all others belonging to the autonomic nervous system, are first stimulated and then depressed by nicotin. Since these nerves are antagonists and since, also, both are in a condition of tonic activity, the vagus tending to slow and the sympathetic to accelerate the heart so that the usual rate of this organ is the resultant of these two actions, it is evident that if the activity of these nerves is either increased or diminished, several results are conceivable. Thus a slowing of the heart may result from stimulation of the vagus or from paralysis of the accelerators; an increased rate may result from either a paralysis of the vagus or from a stimulation of the accelerators. The sequence in which the nerves are affected by nicotin and the response of the heart (depending on its condition) determine the end-result: the heart may be slowed, accelerated or the rate remain practically the same. All of these effects have been seen in both animals and man in nicotin poisoning. A maximum acceleration occurs if the stimulation of the accelerators coincides with the paralysis of the vagi.

Clinically, however, irregularities of the heart accompanying the excessive use of tobacco have attracted more attention than changes in rate. Many of these irregularities have recently been traced back, in part at least, to changes in the activities of these nerves, for these nerves influence not only the rate of the heart but also the conduction of impulses from one part to another and, further, the ability of different parts of the heart to take up a spontaneous rhythm.

Thus stimulation of the vagus delays the conduction of impulses from auricle to ventricle, causing partial heart block; stimulation of the accelerators facilitates the conduction of such impulses; paralysis of the accelerators delays the conduction and so may contribute to the appearance of a heart block, especially if the vagus is in a condition of increased activity. Increased activity of the accelerators facilitates the process of stimulus formation, and so may lead to the appearance of extrasystoles. The action of the vagus is exerted primarily on the auricle and the upper part of the tissue connecting auricle and ventricle; it has little direct action on the ventricle. The accelerators influence the ventricles as much as they do the auricles, if not more, and thus the simultaneous stimulation of a vagus and the accelerators may lead to a condition of ventricular tachycardia, that is, a condition in which the ventricles are beating at a rapid rate entirely independent of the auricles.

By the use of graphic methods, including that of the electrocardiograph, Pozzi and Clerc,[2] and Bull, Clerc and Pozzi[3] have observed in dogs under the influence of nicotin a great variety of cardiac irregularities identical with those which result from stimulation of the cardiac nerves, either singly or together or from stimulation of the one and paralysis of the other. Among the effects noted were simple bradycardia (with normal rhythm) probably due to the action of the vagus on the sino-auricular node; incomplete or complete heart block probably due to disturbances of conduction (vagus effect) combined with accelerator or muscle action; a shortening of the interval between the contraction of auricle and ventricle, and finally an auriculoventricular rhythm such as may be obtained by stimulation of the accelerators and, under some conditions of the vagus; the appearance of extra-

1. The Rhythm of the Heart, THE JOURNAL A. M. A., Oct. 23, 1915, p. 1462.

2. Pozzi and Clerc: Jour. phys. et path. gén., 1913, xv, 1.

3. Bull, Clerc and Pozzi: Bull. Soc. de biol., 1914, lxxvii, 213.

systoles of various origins; marked acceleration, and a retrograde rhythm in which the auricular follow the ventricular beats.

As yet only a few of these effects have been described in man after the excessive use of tobacco; but bradycardia, tachycardia and the appearance of extrasystoles have been noted. These animal experiments, however, may help in the interpretation of symptoms already known and indicate what other symptoms may be expected. All of these nervous disturbances of rhythm from nicotin seem to be purely functional, and to disappear on the discontinuance of the drug.

SOME INTERRELATIONS OF DIET AND MILK PRODUCTION

Since the advent of our present-day knowledge of nutrition, it can no longer be believed that the proteins of the body fluids and tissues are merely replicas, so to speak, of the albuminous substances which enter into the diet. There may be a wide divergence in the chemical make-up of the food and body proteins, respectively, a fact which led to the statement, widely quoted in the lay press a few years ago, that cannibalism is theoretically an ideal mode of nutrition. The remark was, of course, originally intended to indicate that any scheme of diet which would supply the nutrient units—the amino-acids in the case of proteins—most nearly in the quantities and proportions in which they are to be used or deposited in the body, approaches the theoretically correct ration. Precisely so, one could most easily build a Gothic cathedral by demolishing carefully a structure of this type and using the building material thus acquired for the reconstruction of a new edifice.

The investigations of Abderhalden, Osborne, Mendel, McCollum and others[1] have given unmistakable evidence that individual proteins from different natural sources in the plant or animal kingdom have unlike efficiency in the nutritive functions. This is particularly conspicuous in the case of growth, for which some of the isolated proteins seem to lack essential constructive units. The recent studies carried on in this country, notably by Osborne, Mendel, McCollum and their co-workers, have aimed to ascertain what amino-acid groups are really indispensable for growth or maintenance, so that it may be known to what extent they must be provided for in any adequate dietary. We have already pointed out that so long as the constructive capacity of the body is largely unknown and this field of investigation remains open to further research, the safe guide in nutrition will direct us to the use of a liberal mixed diet, in which the law of chance makes the serious lack of any essential diet component less likely.

The production of milk calls for unique metabolic performances in which the production of protein is involved. In the case of a lactating individual, this participation of the mammary glands in the need of suitable food is far from negligible. The occurrence of lactose, special proteins like casein and lactalbumin, and the lower fatty acids in milk leaves little doubt that the function of milk production involves special constructive powers. It might be assumed, therefore, that despite the dependence of a growing organism on a suitable kind or variety of protein to secure perfect growth at a normal rate, the mammary gland is independent, to a larger degree, of the kind of protein in the diet. Synthesis might play a larger part in this structure.

Experiment alone can answer the inquiry here raised regarding the possible extent of special synthetic power for the formation of amino-acids needed to elaborate milk. It has long been known that the nature of the milk proteins is not altered by the character of the maternal diet, however much the volume of milk flow may be modified. Hart and Humphrey,[2] of the Wisconsin Agricultural Experiment Station, have examined the possible relation of the quality of proteins to milk production on cows. By making the ration of successive periods of observation strictly comparable in respect to total quantity of protein, "nutritive ratio," that is, relation of protein calories to the total available energy intake, and amount of "roughage" fed, they were able to note the amount of milk protein produced at the expense of a given unit of food protein. There was clearly a marked difference in the efficiency of the proteins from corn, wheat and milk, respectively, for continued milk production. In the concentrations of corn and wheat proteins used, the body always lost nitrogen after feeding with rations containing these nutrients, whereas, a positive balance followed the use of the same amount of milk proteins in the diet. Evidently the synthetic power of the mammary gland will not compensate for deficiencies in protein structure. Under the special conditions imposed in the Wisconsin experiments, it was found that milk proteins had an efficiency for milk production and tissue restoration of about 60 per cent., while the corn and wheat grain proteins showed an efficiency of 40 and 36 per cent., respectively.

As Hart and Humphrey express it, this opens up anew the problem of the protein requirements for milk production, which must be studied from the newer angle of protein structure. They also point out the somewhat astonishing fact of the influence of the forces of milk secretion in maintaining a yield of milk at the expense of tissue protein. Instead of finding a marked drop in the production of milk either in volume or concentration when their animals were fed

1. For a review of this subject consult Mendel, L. B.: Nutrition and Growth, THE JOURNAL A. M. A., May 8, 1915, p. 1539.

2. Hart, E. B., and Humphrey, G. C.: The Relation of the Quality of Proteins to Milk Production, Jour. Biol. Chem., 1915, xxi, 239.

on the relatively inefficient and insufficient corn or wheat ration, not only the flow but also the quality of the milk was maintained. This was, of course, done at the expense of distintegrated body tissue.

These experiences do not apply so practically to the human subject, who enjoys a wider latitude of choice in diet. Nevertheless, they give added support, if such is needed, to the desirability of including a liberal allowance of milk and milk products in the regimen of lactating women. It is doubtless true that these individuals are not infrequently producing milk at the expense of their own tissues, when a more rational scheme of diet would insure gains instead of losses.

ATTEMPTING TO CRIPPLE THE FOOD AND DRUGS ACT

The federal Food and Drugs Act was passed in 1906. By one of its most important provisions a drug product may be declared misbranded, "the package or label of which shall bear any statement . . . which shall be false or misleading in any particular." In due time, the interests affected attacked this portion of the law. A "cancer cure" quack who had been sued by the government contended that the law did not apply to claims for the curative effects of medicine but only to claims regarding composition and source of origin. The quack argued, in other words, that when Congress said "false or misleading in *any* particular" it really meant "false or misleading in *certain* particulars." When the case reached the Supreme Court of the United States the quack's contentions were upheld — in a divided opinion. So badly crippled was the Food and Drugs Act by this decision of the Supreme Court that the president sent a message to Congress urging an amendment to the law so that it might be restored to its previous efficiency. In his message the president said:

"I fear that if no remedial legislation be granted at this session the good which has already been accomplished in regard to these nostrums will be undone, and the people of the country will be deprived of a powerful safeguard against dangerous fraud."

As a result of this message the Sherley amendment was passed. This amendment declares that a drug shall be deemed misbranded:

". . . if its package or label shall bear or contain any statement, design or device regarding the curative or therapeutic effect of such article, or any of the ingredients or substances therein, which is false and fraudulent."

While the amendment did not give to the law the strength that might have been given, it gave the public some measure of protection against those who would swindle the sick. Naturally, the amendment was — and is — viewed with disfavor by the "patent medicine" fraternity, and it was bound to be only a matter of time before the exploiter of some fraudulent nostrum should attack the validity of the amendment. This has finally been done. As the original law was attacked by a "cancer cure" faker so the amendment is now being fought by a "consumption cure" promoter.

"Eckman's Alterative," a fraudulent consumption cure, was "discovered" by a "horse doctor." It was examined in the Association's laboratory and a report published in THE JOURNAL.[1] This, in effect, declared the stuff to consist, essentially, of alcohol and calcium chlorid, flavored with cloves. Later the federal authorities made a seizure of this nostrum, declaring it misbranded because, among other things, it claimed to be a cure for consumption, "whereas in truth and in fact, said article of drugs would not cure tuberculosis or consumption." The company was found guilty and a decree of condemnation and forfeiture was entered.[2] The concern thereupon carried up the matter on a writ of error and it is now before the Supreme Court of the United States.

The Eckman concern raises a number of technical points in its attempt to justify the fraudulent business in which it is engaged. These are described in a recent issue of the *Oil, Paint and Drug Reporter*. One is said to be based on the fact that the claim made that Eckman's Alterative will "cure" consumption appeared, not on the label attached to the bottle, but on the circular around the bottle. It is contended that as the contents of this circular did not become known to the purchaser until the package had been purchased by him and had left the realm of interstate commerce and entered that of domestic commerce, Congress could have no control over the wording of the circular. By far the most important point raised, however, is that attacking the constitutionality of the Sherley amendment. In its writ of error the company is said to allege that the Pure Food Law is unconstitutional, "in that it undertakes to regulate statements regarding the curative and therapeutic effect of the articles, which said statements are mere opinions which cannot be regulated by an act of Congress." Continuing further in this strain, the Eckman Company is quoted as saying:

". . . we want to call in question the power of Congress to prevent a person from making statements or claims concerning the virtue of drugs, whether modest or extravagant, and we say that an owner, when advertising his drugs has a right to exploit them and advance opinions concerning the curative properties thereof, notwithstanding the fact that such opinions may be objected to by others, and that he may make claims as to the result which will follow the use of his drugs which to some may appear unreasonable, because, in doing so, he is only doing that which the law gives him the right to do."

Moreover, this firm, engaged in one of the cruelest of the "patent medicine" frauds — that of selling an alleged cure for consumption — is said to declare:

". . . whether or not a person should be prosecuted for an offense or his property condemned, back of the prosecution

1. "Nostrums and Quackery," Ed. 2, p. 90; also a later article in THE JOURNAL A. M. A., Nov. 7, 1914.
2. Notice of Judgment No. 2995, March 30, 1914, issued Aug. 3, 1914.

or back of the condemnation, must be an offense or crime defined by law, not merely an offense that is to be determined by the state of public opinion or of scientific opinion."

The company apparently ignores the fact that the law has already made lying on the label an offense and that such a law was passed because public opinion has been aroused to the way in which the "poisoners of the public health" have, in the past, plied their wretched trade. The argument that the curative properties of drugs are matters of opinion and, therefore, not subject to legislation was splendidly met by Justice Hughes of the United States Supreme Court, one of the three members of the court who dissented from the opinion that made the Sherley amendment necessary. Said Justice Hughes:

"Granting the wide domain of opinion and allowing the broadest range to the conflict of medical views, there still remains a field in which statements as to curative properties are downright falsehoods and in no sense expressions of judgment."

This opinion must surely be held by all right-thinking persons who have given the subject any consideration.

WOMEN PHYSICIANS AND THE WAR

The present war, in draining the belligerent countries of their male population, has naturally thrown unwonted responsibilities on women. In various callings, positions from which women had previously been rigorously excluded, or to which they had been admitted only under protest, are now being thrown open, and women are eagerly invited to enter. In the medical profession especially the demands of the military service have produced a deficiency in the supply of civilian practitioners which can be remedied only by utilizing the services of women physicians.

Our London correspondent[1] reports that the medical journals in Great Britain are full of advertisements offering posts to women, and that the situation has become so acute that a large hospital sent an application to the secretary of the London School of Medicine for Women, "Send us *any* women at *any* salary." A daily newspaper also states, on the authority of the London School of Medicine for Women, that an infirmary post in the Whitechapel district, previously held only by a man at a salary of $500 a year and emoluments, is now advertised as open to a woman at $1,000 and emoluments. This extreme demand for women, of course, cannot continue indefinitely after the close of the war. Still, for many years after the cessation of hostilities, it will probably be literally impossible to fill all medical posts with men as exclusively as heretofore. Not only will the medical staffs of the armies in the field return from the front with ranks thinned by the hazards and hardships of war, but also the younger generation of men physicians will be greatly depleted for a time by the fact that the young men who should now be acquiring a medical education are serving under the flag. This prospect of a continuance of the demand for women physicians, at least for some years, has caused a marked increase in the numbers of women medical students.[2] The registration in the London School of Medicine for Women has doubled. Other British medical schools and hospitals are said to be considering the admission of women,[3] and one (Charing Cross Hospital), it is reported, has already opened its doors to women students.[4]

In Germany, according to press reports, in spite of the absence of the customary numbers of American, Russian, English and Swiss women students, the enrolment of women medical students has risen from 874 to 1,150, and the entry of German women in the medical course has been greatly facilitated by a recent measure recognizing the diplomas of girls' schools as adequate entrance credentials throughout the empire.

While at the close of the war men will tend to displace women physicians again to a greater or less extent, it may be taken for granted that the old order will never be reestablished in its entirety. If there are fields of medical work for which women are entirely unfitted, the fact will have been demonstrated and they will be replaced as speedily as possible; but if there are posts which a competent woman may fill as well as a competent man (it is said, by the way, that even in the organization and administration of Red Cross units women have done excellent service), it will be impossible for conservatism any longer to deny all opportunity to women. If there is any department of medicine to which women are especially adapted, that fact also will probably have been demonstrated on a larger scale than has hitherto been possible. After the war, in short, there will be a readjustment accompanied by more or less friction; but European women physicians may undoubtedly look forward in the end to a fair field, from which old prejudices have been to a considerable degree eliminated by the pressure of necessity. It will be interesting to see what use they make of their enlarged opportunities.

1. Women Physicians and the War, London Letter, THE JOURNAL A. M. A., Oct. 23, 1915, p. 1474.

2. The Opening of the Medical Schools, London Letter, THE JOURNAL A. M. A., Oct. 30, 1915, p. 1566. Walker, Jane: How is Medicine as a Profession for Women Affected by the War? Practitioner, London, September, 1915, p. 288.

3. Willey, Florence E.: War and Medical Education of Women, Lancet, London, Oct. 9, 1915, p. 802.

4. Modern Hospital, September, 1915, p. 150.

Marriage of Tuberculous Persons.—The supreme court of New York has decided in the case of Sobol vs. Sobol that the marriage of a person suffering from tuberculosis might be annulled at the instance of the other party to the marriage when the existence of the disease had been concealed. The court decided that in view of the possible serious consequences of such a marriage to the wife, to the children if any were born, and to the community, the marriage contract should be annulled. The legal basis of the decision was the fraud of the defendant in concealing and misrepresenting the condition of his health.—*Public Health Reports.*

Current Comment

A MODEL BILL FOR HEALTH INSURANCE

A tentative draft of an act to provide for compulsory health insurance of wage earners appears in a pamphlet[1] just issued by the American Association for Labor Legislation. This pamphlet, containing the thirty-page outline of a bill and an explanation of its provisions, embodies the results of three years' study by the social insurance committee of that association, which has been particularly fortunate in having the aid of the country's leading experts, including, among others, Miles M. Dawson, actuary, and joint author of "Workingman's Insurance in Europe"; Dr. S. S. Goldwater, late commissioner of public health of the city of New York; Dr. Alexander Lambert, chairman of the Judicial Council of the American Medical Association, and I. M. Rubinow, actuary, and author of "Social Insurance." This tentative draft provides that the cost of insurance is to be distributed among employers, employees and the state. This will entail no new expense for the working man, since the contributions of the employer and the state will enable the working man to purchase the full benefits of the act for the same outlay he now makes for burial insurance alone. The benefits included within the draft are medical care, nursing attendance, medical and surgical supplies for a limited period, cash payments during sickness for a maximum of twenty-six weeks in a year, special obstetric aid for the family, and a funeral benefit on the death of the insured. To administer the benefits, employers and employees are to be grouped in mutual associations, supervised by the state and organized according to trade and locality. It is anticipated that this method of organization, with the possibility of reducing insurance rates with an improvement in health and of cooperating with the public health authorities, will lead to an effective campaign for the conservation of health. The committee has very wisely not attempted to outline the machinery necessary to organize and provide this medical care, because it considers that provisions so vitally affecting the medical profession can be worked out most advantageously by physicians themselves. Since the pamphlet is published for the express purpose of drawing constructive criticism from the parties most interested, this is the time for the profession to express its preference. The suggestions received will be used in preparing a bill for introduction into the legislatures of 1916. It is hoped that physicians will take advantage of this opportunity and that it will be possible to avoid that lack of cooperation between the physicians and legislators which, for a time, marred some of the foreign legislation. The time to influence legislation is when it is in a formative stage. If physicians will study this important and rapidly developing problem and help to work out an equitable method of furnishing medical care and relief for working men, much dissatisfaction later on can be avoided. In England, physicians failed to make themselves heard until after the law was enacted.

1. Health Insurance, the American Association for Labor Legislation, 131 East Twenty-Third Street, New York.

A SWINDLE IN AUTOMOBILE SUPPLIES

Have you been approached by a suave salesman who is willing to let you in on a ground floor proposition to obtain your automobile supplies at cost? If you haven't, you may be! He is abroad in the land, and physicians should look out for him. They are his special "game." A certain "T. A. Buck" claims to be the representative of "the Auto Owners' Service Company of Toledo, Ohio," and offers for $10 a yellow paper certifying that the purchaser "is a member of the Auto Owners' Service Co., and shall receive all automobile accessories and supplies which he may purchase from the said company at cost f. o. b. factory for one year." But the trouble is that neither the city nor telephone directory of Toledo contains the name of the concern or the name of T. A. Buck. Further, owners of public garages and other concerns of Toledo that ought to know say that no such company exists in that city. As one of our correspondents puts it, there have been "several dozen" of such companies in Toledo, "all of which border on the fraudulent." Toledo, however, is not the only city that has been honored as headquarters for concerns that offer to furnish automobile supplies at less than cost. Physicians must be on the watch. There are reliable concerns that furnish automobile supplies on favorable terms, but these, as a rule, do not have traveling men selling certificates of membership for cash. In any event, if contracts are to be entered into, let the company send the bill in the regular way. This will give time for investigation and cool thinking after the smooth-talking representative has departed, which is far better than doing the cool thinking after the cash has departed.

THE RETIREMENT OF DR. S. S. GOLDWATER

In a brief service of less than two years as commissioner of health of the city of New York, Dr. S. S. Goldwater effected many important reforms which mark his tenure of office as unique in efficiency. The current issue of the *Weekly Bulletin* of the New York City Department of Health lists these services as follows:

1. Placing most of the important supervisory positions on a full-time basis, with a corresponding increase in the salary attaching to the positions.
2. Establishing a bureau of public health education under a director chosen as the result of an open competitive examination, and insisting on education as an indispensable factor in public health administration.
3. Establishing a division of industrial hygiene, thereby properly claiming as a health department function an important but hitherto neglected field of public health activity.
4. Establishing a division of statistical research by readjustment of existing positions within the bureau of records.
5. Revision of the sanitary code and formulation of a complete set of regulations thereunder.
6. Advancing the work of school medical inspection by providing that private physicians may make the required physical examinations.
7. Broadening the application of the dog muzzling ordinance and thereby reducing the prevalence of dog bites and the number of rabid animals in this city.
8. Waging a persistent campaign against fraudulent patent medicines and securing the adoption of an ordinance provid-

ing that the names of the ingredients be printed on the label of all nostrums sold in this city.

9. Providing for the regular annual physical examination of all employees of the department of health.

10. Reorganizing the bureau of food and drugs and placing at its head a recognized authority in this field, chosen as the result of an open competitive examination.

11. Inaugurating a campaign of education against the use of alcohol as a beverage.

12. Insisting on the recognition, as a menace to health, of overcrowding in the street cars, and compelling the street railway companies to provide the service needed to the limit of their capacity.

THE JOURNAL from time to time has commented on some of these enterprises. Perhaps of greatest importance are those reforms listed under headings five and eight. They represent widely different aspects of the work of a modern health department, but are evidence of the thoroughly scientific, yet at the same time intensely practical knowledge of his work possessed by the retiring commissioner. Some of the reforms are distinctly novel, and yet the campaign of education against the use of alcohol and the recognition of overcrowding in street cars as a menace to health, all will agree, are distinctly problems within the scope of an adequate health service. In conducting these activities, Dr. Goldwater has not in any case exceeded the duties of an efficient health officer, but has demonstrated that the office may be filled to best advantage by a man of thorough scientific training, untiring zeal and uncompromising courage. It is gratifying to learn that his successor, Dr. Haven Emerson, "is in full accord with the aims and policies of the retiring commissioner."

EDWARD LIVINGSTON TRUDEAU

When Dr. Edward Livingston Trudeau, whose death is announced in another column, himself a sufferer from tuberculosis, sought health in the Adirondack Mountains, in 1884, there were available in this country practically no provisions for the treatment and control of tuberculosis. The establishment of the Adirondack Cottage Sanatorium at Saranac Lake in New York marked the erection of the first institution devoted to the fresh air treatment of tuberculosis and stimulated the movement for sanatoriums, hospitals and dispensaries devoted wholly to this disease. Now, after thirty years, there are approximately 575 sanatoriums and hospitals with a capacity of 35,000 beds, 450 tuberculosis dispensaries, more than 1,000 physicians and over 4,000 nurses devoted wholly to the treatment and study of tuberculosis. More than 400 open air schools attest the practicality and success of Trudeau's idea. All are expressions of the influence of the Adirondack Cottage Sanatorium. In connection with the sanatorium should be mentioned the work of the laboratory established by Trudeau at Saranac Lake. During the last two decades monumental and important contributions to the study of tuberculosis, particularly the field of immunity, have emanated from this laboratory. Under the guidance of Dr. Trudeau, a number of men have studied at Saranac Lake, whose names today are of international importance in their relation to the study and control of this most dread disease. There is something stimulating in the very idea of the fresh air treatment of tuberculosis. There is something of the hero in the work of Trudeau, who, himself a sufferer from a wasting and fatal disease, devoted a lifetime to the alleviation of the distress of fellow sufferers from tuberculosis. Certainly, his name should endure as one who devoted himself, without hope of personal or pecuniary gain, to the proving of a principle of lasting benefit to mankind.

SECTS IN MEDICINE—THEIR ABSURDITY

On another page[1] appears a statement regarding the action taken by the Ohio State Medical Board in its attempt to regulate the medical cults in Ohio under the new law. The situation in that state furnishes an excellent illustration of the utter absurdity of the conditions which must result in any attempt to recognize by legislation the various medical cults which are continually springing up and demanding the right to practice medicine under lower educational standards than are required of physicians. The fact that fourteen different cults are specifically mentioned in the Ohio law shows how ridiculous the situation has become. Much confusion already exists in all but a few of the states in which there has been legislation recognizing sectarianism or cults. The New York legislature, in 1907, recognizing the possibility of an endless number and variety of cults arising in the future, refused to recognize any, and provided a single license and the same educational qualification for all who desired to treat the sick. Similar action has recently been taken by the New Hampshire legislature. In other states the measures thus far provided as the result of the clamor of these cults have been compromises; they have resulted in lowering, to a greater or less extent, the minimum qualifications of those who are to practice the healing art, and to the same extent subjecting the public to the danger of ignorance and incompetence from those so licensed.

SUBSCRIPTION SWINDLERS—ONCE MORE A WARNING

In the department of Queries and Minor Notes in this issue of THE JOURNAL appears again a warning against a fraudulent soliciting scheme twice previously mentioned in THE JOURNAL.[1] Several letters have been received from physicians in New York and New Jersey, indicating that this form of subscription swindling is particularly active at this time. The young man who works the scheme approaches physicians with the story that he is anxious to acquire a college education and that this may be obtained by securing subscriptions to various periodicals, which entitles him to a number of votes. He then presents a subscription blank like the one reproduced in THE JOURNAL, October 23. Several forms are used under such headings as the "Cornell Educational Association," "Michigan Educational Association," the "National Society

1. Medical Education, THE JOURNAL A. M. A., this issue, p. 1838.
1. Cornell Education Association—A Warning, General News, THE JOURNAL A. M. A., Sept. 4, 1915, p. 888; Subscription Swindlers Still at Work, Oct. 23, 1915, p. 1472.

of Universities," etc. We are trying our best to warn our readers regarding this particular scheme because it is one that appeals to the generous and philanthropic instincts of the average human being. It is, therefore, the most contemptible type of swindle. So far as THE JOURNAL is concerned, those representatives who are authorized to collect money carry a letter of authorization signed by the Editor and General Manager, bearing the seal of the Association and the signature of the agent.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Personal.—Dr. J. C. Helper, Woodriver, who a month ago was afflicted with anthrax, has been pronounced cured.——Dr. James M. Postle, DeKalb, was severely injured in an automobile accident near Bartlett, November 4.——Dr. William S. Howell, Winnebago, who has been ill for several months, is convalescent.——Dr. Eley E. Perisho, Streator, was operated on for appendicitis in the Streator Hospital, November 4.——Dr. Harriett B. Ward, Elgin, is preparing to leave for Los Angeles where she expects to spend the winter and may make her home.——Dr. Auda Garrison, Galatia, fractured both bones of the right forearm while cranking his automobile, November 5.

Warning Against Diphtheria.—On November 12, Dr. C. St. Clair Drake, secretary of the State Board of Health, declared that Illinois is threatened with one of the worst epidemics of diphtheria in the history of the state. The disease has appeared simultaneously in every section of the state and its spread is greatly feared by the health authorities. Dr. Drake urges that quarantine be rigidly enforced; that no case of diphtheria be declared cured until examination of cultures from the throat prove negative; that all children exposed to the disease should have cultures taken, that the prophylactic use of antitoxin should be general, and that tests should be made to ascertain what members of the family are subject to the disease.

Chicago

Personal.—Dr. Theodore B. Sachs has been reappointed a member of the board of trustees of the Municipal Tuberculosis Sanatorium and continues as director of the institute.——Dr. Thomas A. Hogan has been appointed a member of the staff of the dispensary of the Municipal Tuberculosis Sanatorium.

Typhoid Carriers Under Guard.—The commissioner of health reports that he has three typhoid carriers under surveillance. They will be guarded night and day by policemen as the County Hospital will not take patients against their will and as placing them in the Municipal Contagious Disease Hospital would expose them to the risk of other communicable diseases.

Semicentennial of Hospital.—The semicentennial of Mary Thompson Hospital for Women and Children was celebrated from November 16 to 20. On November 16 a public meeting was held in the rooms of the Chicago Woman's Club at which a history of the hospital was read by Miss Brayton, and addresses were made by Mrs. George Bass, president of the board of trustees, Mrs. Ella Flagg Young, Dr. Homer M. Thomas and others. On Wednesday a formal reception was given at the hospital at 6 p. m., in honor of the graduate and pupil nurses of the Training School for Nurses of the hospital. On Thursday evening a banquet was held at the LaSalle Hotel, and during the entire week special clinics were given by members of the staff at the Hospital, from 8 a. m. to 5 p. m.

INDIANA

Personal.—Dr. Marcus Ravdin, Evansville, who has been seriously ill with gastritis, is now convalescent.——Dr. Samuel A. Shoemaker, Bluffton, started November 1 for a trip to the Pacific Coast, visiting en route many of the medical colleges of the West.

Dispensary-University Trouble Settled.—The Board of Health of Indianapolis and the Indiana University School of Medicine have come to a satisfactory settlement of the difficulties mentioned in the last issue of THE JOURNAL. An agreement has been made whereby the college is allowed to use the City Hospital for clinical purposes and the city agrees to pay the college for conducting a free dispensary. The board of health retains the power to appoint and discharge employees and in case of disagreement, the question will be decided by a committee of three composed of one member of the faculty of the college, one member of the board of health and a third to be selected by these two.

IOWA

Health Survey Finished.—The health survey which has been conducted by Dr. Freeman of the United States Public Health Service in Dallas County has been completed. In 500 homes which were revisited the owners or occupants had already made efforts to follow out the suggestions made on the occasion of the first visit.

Home for County Society.—Dr. Archelaus G. Field, Des Moines, has made a proposition to the Polk County Medical Society to provide the organization with a home. Dr. Field's offer is to allow his residence on Thirteenth Street to be appraised by a competent board and after the price is fixed agrees to donate a considerable part of the cost to the society.

KANSAS

Public Health Nursing Association.—The Public Health Nursing Association of Topeka now has nine nurses on its staff, one of whom is to be assigned to duty with patients suffering from communicable diseases.

Personal.—Dr. Philip B. Matz, Leavenworth, has been appointed physician to the Kansas Penitentiary, succeeding Dr. James T. Faulkner, resigned.——Dr. Walter S. Sutton, Kansas City, has returned after service with the French Army.——Dr. Charles Hedinger, Canton, is still in the active practice of medicine although he has just celebrated his ninety-fourth birthday.

MARYLAND

Meetings.—A meeting of the Physicians' Civic Club was held November 11, at the Medical Library Building, for permanent organization and to listen to an address by Frederic C. Howe, commissioner of immigration at New York.——The permanent organization meeting of the Interstate Psychiatric Association will be held at the Sheppard and Enoch Pratt Hospital, at Towson, on November 23. A constitution has been drawn up and will be voted on at this meeting. Addresses will be made by Dr. Lewellys F. Barker, Baltimore, and Dr. Henry A. Cotton, Trenton, N. J.

Pasteur Institute to Close.—Announcement has been made that the work of the Pasteur Institute at Mercy Hospital, which is a department of the University of Maryland, is to be discontinued, and that the federal government will take up the work of the institute. Patients desiring treatment will have to go to New York, Philadelphia or Washington until the government makes arrangements with the local health department for the distribution of the serum used in the treatment of hydrophobia. Dr. Nathaniel G. Keirle, director of the institute, who has been in charge of the work for the past twenty years, will continue as professor of medical jurisprudence at the university.

Academic Day.—Academic Day was observed at the University of Maryland on November 11. At the celebration, the Provost, Dr. Thomas Fell, announced that the university officials hope in a short time to acquire an endowment of a quarter of a million dollars at a very conservative estimate. He further added that the outlook for making the University of Maryland the recognized state university by the next legislature was encouraging. The event was the first since the merger of the university with the College of Physicians and Surgeons. The three institutions now incorporated as the University of Maryland—the university proper, St. John's College and the College of Physicians and Surgeons—were represented.

Personal.—Dr. Frederick Janney Smith, chief resident physician of the private medical wards at the Johns Hopkins Hospital, has resigned to become superintendent of the Henry Ford General Hospital in Detroit.——Dr. Ralph B. Seem, lately in charge of the dispensary of Johns Hopkins

Hospital, has been made first assistant superintendent, to fill the vacancy caused by the resignation of Dr. Karl H. Van Norman.——Dr. Lewis A. Sexton has been promoted from admitting physician to the directorship of the dispensary, succeeding Dr. Seem.——Dr. Martin L. Jarrett, Jarrettsville, is improving after undergoing an operation at St. Joseph's Hospital.——A luncheon was given in honor of Dr. Hugh H. Young, Baltimore, by the Chamber of Commerce at San Antonio, Texas, November 11. In the afternoon a reception was given in Dr. Young's honor by the local chapter of the United Daughters of the Confederacy.——Dr. John D. Fiske, Baltimore, fell while boarding the steamship *Manhattan* at Canton, November 4, sustaining painful injuries.——Dr. William B. Hunter, Baltimore, superintendent of Kernans' Hospital and Industrial School for Crippled Children, has resigned and will practice in Wilmington, N. C.——Dr. Charles A. Hellingsworth, Bel Air, is reported to be critically ill.

MASSACHUSETTS

Mental Hygiene Exhibit.—A mental hygiene conference and exhibit was held in Ford Hall, Boston, November 17 to 19, under the auspices of the Massachusetts Society for Mental Hygiene.

New Surgical Unit for War Service.—The second Harvard surgical unit to carry on the work at a British base hospital, which was inaugurated last spring, under the charge of Dr. E. A. Nichols, is rapidly being recruited. All the nurses have been enrolled and many of the medical officers. The unit will be in charge of Dr. David Cheever, Jr., and Dr. Wilfred Grenfell of Labrador was one of the first to volunteer.

Problems of State Health.—At the quarterly meeting which followed the meeting of the State Association of Boards of Health, October 28, the present defects in the executive and financial operation of boards of health in large towns of the state, were discussed. E. A. Ingham, Boston, claimed that an experienced medical man cannot be secured to serve on boards of health because of insufficient salaries and the many duties imposed on those who do serve. Septic sore throat, which has recently been added to the list of reportable diseases, was described by Dr. Eugene R. Kelley and Dr. Francis P. Denny, Brookline, advocated free hospital treatment for contagious diseases. Prof. W. T. Sedgwick of Harvard Medical School urged adequate training in the health service through conferences and courses of instruction. The meeting was presided over by Dr. Milton J. Rosenau of Harvard Medical School.

Personal.—Dr. George C. Shattuck of Harvard Medical School has returned from Serbia and at the University Club, November 4, gave an address on his experience there, illustrated by stereoptican views.——Dr. Charles A. Keegan, Arlington, was struck by an automobile in Nashway, November 4, dislocating his shoulder, fracturing his nose and rendering him unconscious. He is under treatment at St. Joseph's Hospital.——Dr. Louise Taylor-Jones, Boston, has returned from service in Serbia.——Dr. Merrill Foote, who has been on duty at Mrs. Harry Payne Whitney's Hospital at Juilly, France, arrived home, October 5.——Dr. Hugh Barr Gray has been appointed superintendent and physician to the Washingtonian Home, Boston, succeeding Dr. D. A. Ellsworth, deceased.——Dr. Alura A. C. Hughes has been placed in charge of the division of child hygiene of the Health Department of Boston.——Dr. E. Philip Lasky has been elected school physician of Haverhill, succeeding Dr. Hugh Donahue, resigned.

MICHIGAN

Diseases Close Schools.—The death of one child and the illness of several other children from infantile paralysis has caused the closing of the schools at Bentley.——Because of an epidemic of diphtheria the schools of Caro were closed for the week, November 2.

Personal.—Dr. Oscar LeSeure, chief surgeon of Grace Hospital, Detroit, since 1889, was the guest of honor at a dinner given by his medical friends November 12 at the Hotel Statler. Dr. Albert McMichael, president of the Detroit School Board, presided and about one hundred and twenty were present at the dinner.——Dr. Frank B. Marshall, Muskegon, fractured his arm while cranking his automobile, November 7.——Dr. Samuel E. Barnhart, Battle Creek, who has recently recovered from injuries received in an automobile accident at Whittier, Calif., expects to return to his duties by the first of next month.——Dr. Bartlett H. McMullen was elected mayor of Cadillac, November 2.——Dr. James W. Inches, St. Claire, has gone abroad.

MISSISSIPPI

Sanitary Survey.—Dr. J. A. Walter Bancroft, U. S. P. H. S., has been making a sanitary survey of Forest County with the idea of instructing the inhabitants of the rural communities what to do to safeguard their health, happiness and homes.

Society Favors Institution for Feebleminded.—At a recent meeting of the Hinds-Rankin Medical Society in Jackson, a resolution was unanimously adopted memorializing the state legislature to take steps toward the establishment of a vocational institution for the care of the feebleminded of the state.

Tuberculosis Campaign Work.—The Mississippi Anti-tuberculosis Campaign Committee is endeavoring to secure funds for the establishment of a tuberculosis camp in Mississippi and has ordered one million Christmas seals which will be offered for sale in the state. All the funds derived from the sale of the seals will go toward the establishment of the sanatorium.

Pellagra Squad Pardoned.—The twelve convicts at the Rankin State Prison Farm, who were selected as the pellagra squad to work out the theory of Surg. Joseph Goldberger, U. S. P. H. S., that pellagra is produced by an unbalanced ration and can be cured by proper food, have been pardoned. One was released because of physical breakdown and eleven who had completed the test which began February 15, received pardons, November 1.

NEW YORK

Tuberculosis Notes.—The proposition calling for an appropriation of $30,000 for the establishment of the Steuben County Tuberculosis Sanatorium has received a majority of nearly 3,000 votes.——The referendum in Jefferson County for a tuberculosis hospital was carried by a majority of 5,020.——The tuberculosis camp maintained in Caton for the past four months for the Corning Social Service Society was closed October 28. With two exceptions the patients showed a decided improvement in health and strength as a result of their stay at the camp.

Conference of Medical Inspectors.—The annual fall conference of the New York State Association of Medical Inspectors and Physical Educators will be held November 23, at Rochester, meeting as the Section on Hygiene and Physical Education of the New York State Teachers' Association. The chairman of the section is Dr. Clinton P. McCord, Albany. The morning session will take up the subjects of: attainment of correct posture; the physical aspects of school hygiene; defective vision among school children; military training in public schools; hygiene of school buildings, and some aspects of nutrition of schoolchildren. The afternoon program consists of an informal round-table discussion of the various aspects of physical training and school hygiene.

New York City

Dinner to Dr. Goldwater.—A testimonial dinner was given by the officials of the Department of Health to Dr. Sigismund S. Goldwater on Saturday evening, November 6, at the Hotel Savoy. Dr. William H. Guilfoy, registrar, acted as toastmaster. On this occasion Dr. Goldwater outlined his conception of a modern health department as one that would serve for the maintenance of good health rather than temporizing with attempts to cure ill health.

Columbia Plans School for Health Officers.—Plans have been prepared for a two-years course of study at Columbia University leading to the degree of doctor of science in sanitation. Those taking the course must have the degree of M.D. or of C.E. in sanitary engineering or an equivalent degree. It is stated that the teaching staff will be made up of members of the faculties of the schools of graduate engineering, law, medicine, political science and pure science. The course will probably be offered for the academic year 1916-1917.

Merger of City Department.—The mayor and controller plan extensive reorganization of the city government along lines intended to promote economy and efficiency. The first step will be to ask the legislature to revise the city charter, combining into one organization the present health department, department of charities, and Bellevue and allied hospitals, under the name of the Department of Social Service. It is announced that the head of this department will be Dr. Sigismund S. Goldwater who recently resigned as head of the health department.

Occupational Diseases in Fur and Felt Shops.—A report recently made by Dr. Louis I. Harris of the Health Depart-

ment as to the sanitary and clinical conditions found in the fur and felt shops of this city shows that more than 1,000 employees were examined. Among these 80 cases of chronic mercurial poisoning were found 65 cases of chronic pharyngitis, 95 of hypertrophic rhinitis, besides a number of cases of sore gums, tremors, tuberculosis, skin diseases, asthma, and anemia. As a result of this, orders have been issued to seventy-one factories to install additional health protective devices, such as dustless fur-beating machinery, protective clothing, and hygienic floors.

Mortality of Children of Alien Parents Lower than that of Native Population.—The results of a study of the relative mortality of children of native and of foreign parents made by Dr. William H. Guilfoy of the Health Department has just been made public. It shows that of every 1,000 children of native white parentage 44 boys and 35 girls do not reach their fifth year, whereas on the same basis 39 boys and 32 girls the offspring of foreigners die in early childhood. The infant mortality figures are increased when the records of negro children are considered. Among this class 112 males and 95 females out of every 1,000 die before the fifth year. The better showing made by the children of alien parentage is attributed to the fact that foreign mothers are more likely to stay at home and look after their children than are native mothers, and also to the fact that the health authorities come into more personal contact with the foreign mothers.

Anniversary Meeting of Academy.—At the anniversary meeting of the New York Academy of Medicine, November 18, the topic of discussion for the evening was "Disease and Crime—An Analogy. Has Not the Time Come When Ethics, the Law and Medicine Should Join Hands to Form a Constructive Program Aiming to Do for Crime What Has Been Done for Disease Through Systematic Study and Classification, Leading up to Effective Measures of Prevention and Intelligent Individual Treatment?" The speakers were George W. Wickersham, president of the Bar Association of New York, who spoke on "The Concern of Society in the Problem of Crime"; Warden Thomas Mott Osborn of Sing Sing Prison, who discussed "The Part Which Penal Institutions Might Be Made to Play in the Solution of the Problem"; and Chief Justice Harry Olson of the Municipal Court of Chicago, whose topic was "The Progress That Has Been Made and What the Future Promises."

Report of Public Health Committee of Academy of Medicine.—The public health committee of the New York Academy of Medicine has presented a summary of its activities since last May, among which may be noted the following: They have studied the problem of drug addiction and find that in dealing with this problem there is a lack of constructive social policy; they recommend the development of the Farm Colony at Warwick so that cases of drug addiction may be admitted to it and adequately cared for and they also recommend changes in the present court procedure with reference to commitments and the establishment of a colony for female cases, and follow-up service for patients discharged from the Farm Colony, in order to guide them in securing employment and keep them from falling again into the conditions that were responsible for the development of their drug habit; in cooperation with the Municipal Civil Service corporation this committee has considered the proposed change in the qualifications for medical inspectors in the department of health and has endorsed the requirement of one year's experience in a hospital as intern as a condition of eligibility for medical inspectorship in the department of health; they urged the importance of oral tests in examination for medical positions; they have interested themselves in urging the transfer of quarantine from the state to federal control; in street cleaning, studying the relation of dust and dirt to mortality and morbidity; in studying, in cooperation with the American Museum of Safety, the effects of certain occupations on the health of those employed in such occupations; in assisting in the preparation of a circular letter issued by the State Department of Health which was intended as a guide to physicians in the performance of vaccination against smallpox, and in considering the question of sewage disposal into Lake Mohansic; and they have made recommendations for a state policy for dealing with mental defectives, and a number of suggestions designed to add to the efficiency of the health department of the city, such as recommending the establishment of two new milk stations, endorsing the department's request for several additional physicians and nurses in tuberculosis clinics, and the request of the department of charities for a larger nursing staff in the city hospitals.

PENNSYLVANIA

Fountain Unveiled.—The memorial fountain at the entrance of the Twelfth Street Playgrounds, Harrisburg, erected in honor of Dr. William H. Jones, an esteemed colored practitioner of Harrisburg, was dedicated with appropriate ceremonies, November 6.

Medical Society Conducts Clinic.—Physicians from the eight northwestern counties of Pennsylvania conducted a medical clinic held at St. Vincent's and Homot hospitals, Erie, November 9. The clinic was held under the auspices of the Erie County Medical Society.

Dispensary Opened.—The Allentown Free Medical Dispensary of the Associated Charities was formally opened, November 4, and the third annual meeting of the Associated Charities Society was held at the recently acquired headquarters. The dispensary will be under the direction of Dr. William H. Hartzell.

Children's Ward Opened.—The new children's ward of the York Hospital was opened October 27. The ward has accommodations for twenty-five patients and at the time of opening eight were under treatment. The ward was donated to the hospital by Dr. H. David Smyser, York, and the equipment was supplied by the Ladies' Auxiliary Society.

Jefferson Alumni Hold Meeting.—At the annual meeting of the Jefferson Medical Alumni Association of northeastern Pennsylvania, held in Scranton, October 21, special medical and surgical clinics were given by members of the faculty of the college. In the evening a banquet was held at which the following officers were elected: President, Dr. Frederick L. Van Sicle, Olyphant; vice-presidents, Drs. Edward F. Hanlon, Hazleton; George R. Andreas, Wilkes-Barre; and Lewis Edwards, Kingston; secretary, Dr. John D. Williams, Scranton; treasurer, Dr. M. J. McGuire, Wilkes-Barre; auditor, Dr. Merton E. Marvin, Luzerne.

Personal.—Dr. Joseph A. Stockler, Mont Alto, has been appointed laryngologist at the State Sanatorium, Hamburg. ——Dr. Howard L. Hull, Chambersburg, has been appointed associate chief medical inspector of the Department of Health of Pennsylvania with headquarters at Harrisburg.——Dr. Fannie Davis, Pittsburgh, is reported to be critically ill in a hospital in Pittsburgh.——Dr. Frank I. Walters, Pine Grove, who has been seriously ill, is reported to be improving. ——Dr. George W. Mellon, Beaver, has returned from service with the American Red Cross at Belgrade.——Dr. John Spearman, Sharon, has returned after service of a year and one-half with the German army at Gleiwitz, Silesia.

Philadelphia

Vital Statistician Resigns.—Miss Eva Deerdorff, who has been chief of the division of vital statistics of the department of health and charities since February, 1914, has resigned to assume the position of assistant director of the bureau of municipal research.

University Approved Merger.—On November 8 the trustees of the University of Pennsylvania empowered their finance committee to make arrangements with the committee representing the trustees of the Medico-Chirurgical College for the merging of the two institutions. The Medico-Chirurgical board has given the same power to its committee. The joint meeting was held November 15.

Testimonial Banquet.—A testimonial banquet was given to Dr. Daniel J. McCarthy, November 4, to celebrate his return from service in the war zone.——A dinner was given by the West Philadelphia Medical Society, October 26, in honor of Dr. Charles E. A. Codman, president elect of the Medical Society of the State of Pennsylvania. Dr. John Welsh Choskey acted as toastmaster.

Aid Association Election.—At the thirty-seventh annual meeting of the Aid Association of the Philadelphia County Medical Society, November 8, a bequest of $5,000 by the will of Dr. Eugene I. Santee was announced. This raises the total beneficient fund to $50,000. Dr. Jacob R. Shellenberg was elected president; Dr. James T. Wilson, vice-president; Dr. Lewis H. Adler, Jr., secretary, and Dr. John B. Turner, treasurer.

Personal.—Dr. Richard H. Harte, former director of health and charities, in this city, is one of the six surgeons appointed by President Wilson on the newly created board of first aid standardization. The board will teach civilians first aid in time of peace, that the knowledge may be available for military requirements in the time of necessity.——Dr. Rufus S. Reeves has been appointed surgeon to the University Settle-

ment Dispensary at Twenty-Sixth and Lombard streets.——Barton Cooke Hirst received the degree of LL.D. from Pittsburgh University at the ceremonies incident to the dedication, on October 28, of the Elizabeth Steele Magee Hospital.

Health Budget.—The council's committee on health and charities visited a number of public institutions on November 9, the annual visit incident to recommending appropriations for the coming year. Dr. S. Lewis Ziegler, director of health and charities, accompanied the committee men. He explained that the bureau of health asked for $754,340 for next year, as against $456,265 given this year, an increase of $298,075. In the bureau of charities $1,039,688 is asked for, or $179,336 less than was given this year. This decrease is due largely to the fact that a number of sums are available this year for improvements, including $100,000 for the erection of a power plant at the Home for the Indigent at Holmesburg, $80,000 for a power plant at the Institution for Feeble Minded at Byberry, $40,000 for steam and electric ducts and cables at the same place, and also $30,000 for a sewage disposal plant, $38,160 for a heat, light and power plant and $30,655 for the erection of buildings for the care of the feebleminded.

SOUTH CAROLINA

Personal.—Dr. Davis Furman has been reelected chairman of the Greenville board of health.——Dr. Luther A. Riser, Columbia, is taking a special course in public health conservation at Tulane University, New Orleans.

Hospital News.—Magdalene Hospital, Chester, has made an application to amend its charter that it may be known as Pryor's Hospital.——Dr. Frank H. McLeod will entirely rebuild his hospital at Florence at a cost of about $30,000.——St. Mary's Hospital, Anderson, owned and operated by Dr. C. Singleton Breedin, was opened to receive patients, October 26.

Tuberculosis Items.—The Greenville County Tuberculosis Camp was formally opened November 2. The camp has a modern building of sanitary construction and will accommodate from sixteen to twenty patients.——An acre of land one mile beyond Ridgewood has been donated by Mr. L. T. Wiles, Eau Claire, as a site for a tuberculosis camp. Plans have been prepared for four open air cottages, each to accommodate four patients. There are at present eleven patients in the camp.

TENNESSEE

Health Talks.—As a part of the public health campaign which is being carried on actively in Nashville, almost every pulpit in the city was occupied October 17 by physicians.

Tuberculosis Camp to Remain Open.—The tuberculosis camp at the Tri-State Fair grounds, Memphis, will be kept open all winter under the direction of the Batchelor Baby Association. During the summer 220 children were cared for and there are at present six in residence.

New Pellagra Hospital.—A movement has been inaugurated by Hamilton County to take immediate steps in providing an isolation hospital for the treatment of persons suffering from pellagra.——At the Orchard Knob Hospital there have been about fifty deaths from pellagra this year.

Personal.—Dr. Robert H. Newman, Knoxville, who has been on duty with the American Red Cross in Germany for several months, has applied for further leave of absence and expects to go to Russia.——Dr. Philander D. Sims, Chattanooga, celebrated his eighty-seventh birthday anniversary, October 22.

Hospital News.—Large additions are to be made to the private hospital of Drs. Robert P. Oppenheimer and Henry J. Kelso, Knoxville. Improvements will include a large and modernly equipped operating room.——Baptists of Memphis plan to erect a new wing to the Baptist Memorial Hospital to cost $100,000.

Contagious Disease Ward.—Contracts have been let for an isolation ward to be erected on the rear of the Erlanger Hospital lot, Chattanooga. The plans call for a one-story building with two wards each of four beds, eight private rooms, a sterilizing room and quarters for the resident nurse. The building is to cost $6,000.

Sanatorium Trustees Appointed. — The governor has appointed the following trustees to establish the Tennessee State Sanatorium for Tuberculosis: Drs. Olin West, Nashville, and Jere L. Crook, Jackson; and Messrs. W. P. Shipp, Centerville; George D. Richardson, Murfreesboro, and George R. Burry, Rogersville. The board has already looked over the Herbert domain, one of the sites proposed for the sanatorium.

Diphtheria.—The presence of diphtheria in Memphis caused the city board of education, through Superintendent A. A. Kincannon, to close all the white public grammar schools in the city, October 14, until further notice. The Central High School and the Vocational School were not affected by the order. There was no diphtheria among the negroes. It is said that this order was not made on account of the fear on the part of the authorities that the disease would spread, but because the parents of schoolchildren were becoming "panicky" and the attendance at many of the schools had fallen off remarkably. The regular attendance at the Gordon school is 400; October 13, it had fallen to 100. The disease has not been severe and there were few fatalities. Dr. James L. Andrews, on behalf of the department of health, issued a statement explaining the situation to the citizens.

TEXAS

State Surgeons Meet.—At the annual meeting of the Texas Surgical Society in San Antonio, October 19, the following officers were reelected: president, Dr. James E. Thompson, Galveston; vice presidents, Drs. Joseph H. Reuss, Cuero, and Frank Paschal, San Antonio; secretary, Dr. W. Burton Thorning, Houston; and treasurer, Dr. John B. Smoot, Dallas. Dallas was selected as the next place of meeting.

Higher Entrance Requirements.—A report from the University of Texas, Department of Medicine, says that beginning in 1917, in addition to a four-year high school education, two years of college work, including courses in physics, chemistry, biology, English and either French or German, will be required for admission. This makes fifty medical schools which have adopted for admission the requirement of two years of collegiate work.

Sanatorium Items.—Bids have been asked by the Texas Tuberculosis Sanatorium, Carlsbad, for the construction of two two-story and basement dormitories, a dining hall addition to the present subsistence building with basement, and remodeling of the old building, and a sanitary dairy, all these structures to be of reenforced concrete and fire-proof construction.——Contracts have been awarded for the erection of a solarium at the Tuberculosis Hospital connected with the Bexar County farm.——The Floresville Sanitarium, which is under the management of Drs. John F. and Laura Beckmeyer, San Antonio, was formally dedicated October 28.

WISCONSIN

County Sanatorium Opened.—Muirdale, the new tuberculosis sanatorium for Milwaukee County, with accommodations for 275 patients, was formally dedicated November 14, and three days later was opened to receive patients.

Sterilization Law.—It is reported that ten male inmates of the State Home for the Feebleminded have been sterilized under the new state law. Operations on the fourteen remaining male inmates of the home will be deferred until the results of the ten operations already performed have been observed.

Rabies.—The head of a cow sent from Norrie, Marathon County, when examined in the state hygienic laboratory, was found to be affected with rabies. This is the first case of rabies found in the state for more than a year. Stringent measures have been advised in the community to prevent the spread of the disease.

Tuberculosis Notes.—The seventh annual meeting of the Wisconsin Antituberculosis Society was held in Milwaukee, November 18 to 20. On the first day a sanatorium conference was held with Dr. Thomas Willett, West Allis, as chairman; on the second day the business meeting and annual dinner occurred, and on the third day there was a nurses' conference.

CANADA

Toronto Base Hospital in Greece.—The University of Toronto Base Hospital, which has been in Alexandria, Egypt, has gone to Saloniki.

Tuberculosis Sunday.—November 14 was Tuberculosis Sunday throughout Ontario, and about 18,000 Ontario clergymen received instructions to preach on the subject.

Sanitary Institutions.—Sanitation is to be an important matter in the various military camps throughout Ontario this winter. Sanitary squads are being organized by the Ontario Board of Health under Dr. John W. S. McCullough, Toronto. Each squad will consist of one commissioned officer, fourteen noncommissioned officers and forty privates.

Personal.—Capt. B. S. Hutcheson has arrived in Toronto to be medical officer for the American regiment being recruited in Toronto for overseas service. All the members of this company are to be American residents in Toronto. They take the oath of allegiance to the king, for a period of six months after the war.——The Hon. Dr. Preston, a member of the Ontario government, is to represent that government at the funeral of Sir Charles Tupper in Halifax.——Dr. J. R. L. Christison, Edmonton, Alta., is visiting in Toronto on his way to Europe to join the R. A. M. C.——Dr. Thomas D. Cumberland, assistant in the Hospital for the Insane, Toronto, is with the R. A. M. C. in Belgium.

Hospital News.—Word has been received by Canada's minister of militia, Sir Sam Hughes, that the new hospital for Canadian soldiers, financed by the Massey-Harris Company, Toronto, located in Chatham House, Ramsgate, will be ready for use shortly.——The Ontario Hospital staff for the new hospital being erected in Orpington, England, will be appointed by Canadian military authorities in England. The appointments will be made from Canadian physicians already in England or on the continent. Some will, however, be nominated by the Ontario government. These appointments are causing some dissatisfaction both among the medical men in the Canadian militia, as well as among those in private life who have volunteered their services. It is reported several of the latter have withdrawn their offer of services on account of the manner in which selections are to be made.——There is said to be considerable of a tangle in connection with wounded soldiers returned to Canada unfit for further service. Lieut.-Col. Marlow of the camp in Toronto with his medical board have been ordered to investigate the matter at Quebec. The other members of the board are Major C. J. Currie and Capts. F. J. Munn and F. N. Hughes.

GENERAL

Child Welfare Exhibits.—The Children's Bureau of the Federal Department of Labor announces that a bulletin has been prepared to serve as a reply to the many inquiries about child welfare exhibits, which may be had in single copies for the asking. To those who are planning a baby show, a children's health conference, or to communities which expect to observe Baby Week next March, the bulletin offers the benefit of expert advice and practical experience. It is full of suggestions for communities of all sizes, but advises that no community undertake a child welfare exhibit without the cooperation of all social agencies of the community. Instances are given of the benefit to communities in the way of increased appropriations, permanent improvements and a combination of social welfare agencies to secure and carry out a program of legislation and welfare work following child welfare exhibits.

New Officers for Southern Physicians.—At the annual meeting of the Southern Medical Association held in Dallas, Tex., November 9 to 11, Atlanta, Ga., was selected as the next place of meeting. Dr. Robert Wilson, Jr., Charleston, S. C., was elected president, and resolutions were adopted recommending that the proportion of medical officers in the regular military establishment of the United States should equal at least seventy-five one hundredths (75/100) of 1 per cent. of the enlisted strength "or such number as the surgeon general deems necessary." The following section officers were elected: medical section—Dr. Khleaber H. Beall, Fort Worth, Tex., chairman; Dr. Frederick C. Moor, Tallahassee, Fla., vice-chairman, and Dr. Thompson Frazer, Asheville, N. C., secretary; surgical section—Dr. John H. Blackburn, Bowling Green, Ky., chairman; Dr. F. Webb Griffith, Asheville, N. C., vice-chairman, and Dr. Lucian A. Andree, New Orleans, secretary; eye, ear, nose and throat section—Dr. J. Williamson Jervey, Greenville, S. C., chairman; Dr. Thomas W. Moore, Huntington, W. Va., vice-chairman, and Dr. William T. Patton, New Orleans, secretary.

Metal Mine Accidents in 1914.—In Kansas, Minnesota, New Jersey, New Mexico, Oregon, South Dakota, Virginia and the Territory of Alaska, during 1914 there was a reduction of more than 20 per cent. in the fatality rate in metal mines. There was a slightly higher injury rate for most of the mining states for the same period, but, it is believed, as set forth in the report of Albert H. Fay, mining engineer of the bureau of mines, that the enactment of workman's compensation laws and the educational campaign conducted by state inspectors, mine operators and the bureau of mines has resulted in the more accurate figures concerning mine accidents and therefore more nearly represents the real hazards of the industry than the reports of former years. The number of fatalities during 1914 was 559 as compared with 683 in 1913. The number of men employed for 1914 was 158,115, while for 1913 it was 191,276. The fatality rate for 1914 was 3.54 per 1,000 employed, as against 3.57 in 1913. There were 5,073 serious injuries which resulted in the loss of time of twenty days or more, as compared with 5,890 for 1913. The serious injury rate for 1914 is 32.08 per 1,000, as compared with 30.79 for 1913. There were 25,143 slight injuries resulting in the loss of less than twenty days in each instance, as compared with 27,081 for 1913, or, 159.02 per 1,000, as compared with 141.58 for the preceding year.

Infant Mortality Conference.—Launching a concerted movement to "save the babies" of the whole United States, the American Association for Study and Prevention of Infant Mortality closed its sixth annual convention November 12. The delegates, who had been in session at the Bellevue-Stratford for three days, adopted a resolution calling on the association's members to cooperate with the Federal Children's Bureau at Washington, and the American Federation of Woman's Clubs in holding "Baby Saving Week" in every city in the country from March 4 to March 11, 1916. Uniform laws in all the states regarding the regulation of child labor and the enforcement of laws requiring all births to be reported within five days, under severe penalty for failure to do so, will be among the aims of the nation-wide campaign. Congress will also be urged to defeat any bills which allow narcotic drugs to be used as constituents of "soothing syrups" and similar "remedies" for children's ailments. The legislation passed in many states, purporting to regulate such "patent medicines," actually exempted from their provisions many deleterious preparations, it was said. The next annual convention of the association will be held in Milwaukee in November, 1916. The following officers were elected: president, Dr. Samuel McClintock Hamill, Philadelphia; vice presidents, Drs. Joseph S. Neff, Philadelphia, and Dr. Thomas C. McCleave, Berkeley, Cal.; secretary, Dr. Philip Van Ingen, New York; treasurer, Austin McLanahan, Baltimore, and executive secretary, Miss Gertrude B. Knipp, Baltimore.

FOREIGN

Annual Meeting of the Organized Profession in Ecuador.—The first Congreso Medico-Ecuatoriano was held last month at Guayaquil with a large and representative assemblage. Numerous communications were read and public health matters discussed, the time proving all too short for all the papers that had been presented and surgical demonstrations planned. The closing banquet was a brilliant and cordial conclusion to the meeting.

Monument to Carrion.—August 27, the thirtieth anniversary of Daniel R. Carrion's inoculation of himself with Peruvian verruga, a bronze memorial plate was unveiled to his memory. The memorial is in the general hospital at Lima, Peru, and was erected by the medical staff of the hospital where Carrion, a medical student, made his experiment, the "Hospital Dos de Mayo." The *Cronica Medica* mentions that his aged mother was present. The same issue gives a Spanish translation of the report on verruga and Oroya fever published by Strong, Tyzzer and Sellards in THE JOURNAL, March 6, 1915. Young Carrion's experiment resulted fatally and the scientific results were not conclusive.

Deaths in the Profession Abroad.—E. Jeger, known for his experimental work on surgery of the vessels and for the surgical articles he despatched by aviator post during the siege of Przemysl, was taken prisoner by the Russians and died recently in captivity.——F. M. Oberländer, one of the leading urologists of Germany, aged 67. He was one of the founders and editors of the *Klinisches Handbuch der Harn- und Sexualorgane*, and of the *Centralblatt* for the same specialty, and the *Monatsschrift für Urologie*.——E. Ludwig, professor emeritus of applied medical chemistry at the University of Vienna, aged 73, author of several textbooks on medical and pharmaceutical chemistry. His contributions to chemistry were numerous, principally in the line of analysis. He served as president of the national public health service and was a member of the upper house.

WAR NOTES

Exportation of Medical Publications Forbidden.—The *Allg. med. Central-Zeitung* relates that the publishers of medical works and periodicals in the Marken states of Germany have been notified that the military authorities cannot consent further to medical works being sent to the enemies' countries

if the works contain anything that might help the enemy in conducting the war. The publishers are asked to confer with the medical branch of the war department in case of doubt. Brandenburg, including Berlin, is one of the marches.

Alternating Service of the Medical Force with the French Army.—A Paris exchange states that the government has made arrangements by which physicians wearied by fifteen months' service with the active army can yield their places to others now in the home zone. Among the 8,000 with the army, 1,500 have expressed a desire to be relieved of this service, but there are only 600 available among those who have not already gone to the front. The exchanges are made very gradually so as not to interfere with the workings of the service.

Visit of Inspection to Camps of Prisoners in Austria.—The officers of the international committee of the Red Cross, which has its headquarters at Geneva, recently visited Vienna to inspect the camps of prisoners of war and of interned civilians. The party included the president, Ador, Dr. Ferrière and Dr. Schulthess-Rechberg. They visited the camps at Ralzenau, Lenghach, Wieselburg and Mauthausen, and the Vienna information bureau for prisoners of war, and also the various activities of the Austrian Red Cross, which facilitated their mission in every way.

Bathing Facilities for the Soldiers on the Firing Line.—The bath trains and similar arrangements for bathing require a track or good roads, and hence cannot be utilized by the soldiers at the farthest front. To remedy this, the Austrian Red Cross has provided a bathing outfit which is contained in two wooden boxes that can be carried in any vehicle. Three hundred such outfits have been despatched to the extreme front and are proving very satisfactory. The outfit was devised by Dr. J. v. Winter, and is adapted for field hospitals and for disinfection purposes.

The Medical Profession of France and the War.—A complete list of all French physicians and surgeons who have been killed, wounded or taken prisoner in the war to date has been issued at Paris by the Société d' anatomie comparée. It is called the "Livre d' or de la grande famille médicale." and contains also the names of all who have been honored in any way for conspicuous gallantry, with the details, both for army and navy medical officers and civilian physicians and surgeons, veterinarians and pharmacists. The price of the work is 2 francs. It is published by Maloine, 25 rue de l'Ecole de Médecine, Paris, the proceeds, we understand, to go to the relief fund for members of the profession during the war.

PARIS LETTER

PARIS, Oct. 21, 1915.

The War

ROTATION IN SERVICE AT THE FRONT

Many physicians who have been at the front since the outbreak of the war have complained of the injustice in the fact that many other physicians have continued to be stationed at a distance from the front. In a previous letter (THE JOURNAL, Sept. 4, 1915, p. 891) I mentioned an article by M. André Maginot which voiced some of these complaints. The undersecretary for the military medical service has therefore given instructions that, in each regional division, a system of rotation in service shall be established, and each physician shall declare, within the forty-eight hours following the receipt of the order for his departure, if he is unfit for active service in the field. There are, however, regimental physicians who are entirely willing to remain at the front if necessary. They ask why such relief should apply solely to physicians and not to officers as well.

THE MEDICOSURGICAL STATISTICS OF THE WAR

I mentioned in a previous letter (THE JOURNAL, May 15, 1915, p. 1671) the character of the medicosurgical statistics of the war that had been decided on by the minister of war. Certain journals have been ridiculing the idea of such statistics, and Dr. Jacques Bertillon, formerly head of the bureau of municipal statistics of the city of Paris, has come to its defense. He mentions that the military surgeon Chenu compiled medicosurgical statistics on the Crimean and Italian wars which marked an epoch in the history of the science. In particular, conservative surgery, today triumphant, drew from Chenu's statistics the first arguments for its defense; these proved that at this time useless or even harmful amputations were too often made, and that depriving the patient of a limb too often endangers instead of saving his life. How many times has there not been occasion to regret that no such researches were made in 1870-71!

PROHIBITION OF DELIVERY OF ROENTGENOGRAMS TO THE WOUNDED

The attention of the minister of war has been called to the serious disadvantages resulting from the delivery of tracings or roentgenograms to soldiers who have sustained wounds of war. These pictures, which are scrupulously preserved by the wounded, often give rise to functional incapacities, suggested to the patients by the presence of a foreign body. The minister has therefore given instructions that roentgenograms, etc., as well as the case records, shall never be turned over to the patients on their successive discharges from the various hospitals, but shall be transmitted under seal from one hospital to the other, being preserved in the last hospital where the patients have been treated, or finally transmitted to the administrative office of the regional medical service, where they may be consulted whenever it is desirable.

The minister, moreover, reminds the roentgenographers that they are not to perform roentgenoscopy on the men who have been sent back to their military duties after cure, such examinations being reserved for patients under treatment.

EXAMINATION OF THE URINE OF SOLDIERS PRESENTING PICRIC ACID JAUNDICE

At the Réunion médico-chirurgicale de la X-e armée Dr. Launoy, speaking on the same subject, recommended that the test be performed, not on the urine itself, but on a concentrated and carefully purified urinary extract. The reaction of the strip of wool (THE JOURNAL, Sept. 25, 1915, p. 1124) ought to be considered positive only when the coloration obtained resists the decolorizing action of a 1:9 solution of liquor potassae chlorinatae. When possible, the reactions of the urine should be controlled by the character and reactions of the blood serum.

SERUMS FOR THE USE OF CIVILIAN PHYSICIANS

The attention of the minister of the interior was called to the serious inconvenience which the civilian population suffers through the fact that civilian physicians cannot procure serums which are indispensable for the practice of their profession. He replied that civilian physicians may procure antidiphtheric, antitetanic, antimeningococcus and antidysenteric serums directly from the Pasteur institute. The only reservation is, in the case of the last three, that the needs of the army must first be supplied. The supplies of the same serums, moreover, are as much as possible put at the disposal of the prefects for use in charity work. In urgent cases, serum may be supplied to physicians who need it immediately for their private practice.

GENERAL INSPECTION OF THE HYGIENE OF THE ARMY

A general inspection of the hygienic condition of the troops stationed in the interior has just been ordered for the duration of the war. Dr. Vaillard, medical inspector general of the military medical service, is to have charge of this inspection, and is to be responsible directly to the minister of war. His jurisdiction is defined by the assistant secretary for the military medical service as covering the study and examination on the spot of matters relating to the hygiene and material conditions of the life of the troops, their sanitary condition and the measures necessary to prevent or check the development of epidemics either among the soldiers or among the civil population.

THE DIFFICULTY OF OBTAINING ALCOHOL FOR PHARMACEUTICAL USE

Alcohol has been requisitioned for the manufacture of powder. To obtain the alcohol necessary for their work, therefore, pharmacists each month have to address a request to the Office des produits chimiques et pharmaceutiques (THE JOURNAL, Nov. 14, 1914, p. 1775). This alcohol is exclusively for use in filling prescriptions and preparing medicines, and is not to be sold as such. Pharmacists are to ask for no more than the carefully calculated monthly needs of their laboratories. The Office des produits chimiques et pharmaceutiques issues vouchers by means of which pharmacists may procure alcohol, either directly or through their regular dealer, from the distillery indicated on the voucher. The alcohol is furnished by the distillery at the price of requisition, which is now about 100 francs (about $20) per hectoliter (about 26 gallons) at the producers. The Office

des produits chimiques et pharmaceutiques accedes to demands of pharmacists and manufacturers of pharmaceutical products employing not more than 3 hectoliters a month; it cannot comply with demands for larger quantities.

BERLIN LETTER

BERLIN, Oct. 20, 1915.

Personal

Prof. Ferdinand Götz, sanitary expert and director of the German system of physical exercise, died in Leipzig, October 13 at the age of 88 years. Early in his career he became interested in gymnastics and shortly after arriving in Leipzig in 1855, he was instrumental in organizing several turner or gymnastic societies. He also assumed the editorship of a number of journals devoted to gymnastics. He was the author of several books on gymnastics and for many years was chairman of the Association of German Turner Societies. His eighty-fifth birthday was celebrated by all the German turner societies, and an honorary Ph.D. was conferred on him by the university of Kiel.

Professor Sklarek, for many years publisher of the *Naturwissenschaftliche Rundschau*, died in Berlin, October 10, at the age of 80. He has been given the credit of having brought the progress made in the natural sciences and medicine before the public in a popular manner by means of lectures delivered before the Berlin Workers Society and by editorials in the daily press as well as in the journals he edited. In 1868 he published a work on the care of the health. He was also one of the founders of the Berlin Meteorological and Physiological Society.

Professor Boveri, ordinary professor of zoology and comparative anatomy, died in Würzburg October 16 at the age of 53 years. He became lecturer at the university of Munich in 1888. In 1893 he was appointed ordinary professor of zoology and comparative anatomy, succeeding Professor Semper, and director of the zoologic institute in Würzburg. He remained loyal to this institution, refusing the call to Freiburg in 1912 as successor to August Weismann, and also refusing to accept the directorship of the new Kaiser Wilhelm Institute for Biology in Berlin. His work in histology, embryology and comparative anatomy was epoch making. He revolutionized the conception of the tissue cells by discovering the chromosomes (simultaneously with v. Benecken) in the cell nucleus and establishing the important function played by them in cell division. His studies made in connection with these investigations on cells of various forms of animal life were contained in three volumes entitled "Cell Studies" (Jena 1887-1890). His continued research on fertilization and nutrition of the cell placed the study of embryology on an entirely new basis. Much of his work was done on the amphioxus, coral zoophytes and similar animals. In 1909 he published his researches on the determination of sex in the "Physikalischmedizinische Gesellschaft" at Würzburg. One of his most important publications was that setting forth the results of his study of the pathologic anatomy of tumors. In 1914 he published his theory of the development of malignant tumors deduced from his extensive research mainly on the egg of the sea urchin. The basis on which he places the etiology of these malignant growths is a developmental defect of the cell nucleus. His theory did not meet with the approval of well-known pathologists.

Family Life and the Nation

The activities before the beginning of the war directed toward stopping the diminution in the birth rate of Germany have received a tremendous stimulus by the enormous loss of life caused by the war. Shortly after the Franco-Prussian war, the birth rate increased rapidly, reaching the highest point in 1876, namely, 42.6 per thousand. This rate gradually diminished, and in 1913 had fallen to 28.3 per thousand. In Prussia the birth rate in 1899 was 37.5 and in 1913 was 29 per thousand. With regard to the excess of births over deaths, this, too, is changing. In 1895, in Prussia, it was 14 per thousand; in 1913, it was only 13.2. In order to meet the exigencies of the occasion, the newly founded German Society for Bevölkerungspolitik, organized for scientific study of the subject, met recently in Berlin and discussed the question very fully. The presiding officer, Dr. Julius Wolf, in his address directed attention to the Russian statistics showing an increase in population of 3,000,000 to 4,000,000 per year as against 800,000 in Germany. The population of Russia is 180,000,000 as against 68,000,000 in Germany. The difference between the French and German increase is not so great. Previous experience tends to show that there will not be a continuous increase in births after the war. In fact, a large number of cripples and partial invalids and the labor which necessarily must be performed by women will tend to lower the birth rate and do it rapidly, much more so than would otherwise be the case. Dr. Wolf directed attention to every condition bearing on this point, and finally suggested three aims to work for as helps toward the solution of the problem: (1) To exert influence to increase the number of marriages and families with a larger number of children. In Prussia the average age of men when they marry is twenty-nine years, which means that for at least ten years they have been exposed to venereal infection with the resulting possibility of sterility. To combat this, he urged a reform in the present methods of training men for trades, so that they might begin to earn more money earlier. Next to be considered, he said, were the questions of furnishing living places, motherhood premiums, and here the experiences made in Australia would be of great value. The money, he thought, could be provided by taxation, the single man carrying the load, the man of family contributing but little, instead of the present per capita system. The workman can hardly be expected to have a large family unless he is assisted financially; the community would have to assume the burden. The third child is liable to upset the family budget; the fourth child brings the wolf to the door. The community must share this burden of care.

(2) Success in the campaign against venereal diseases would increase the number of births by 100,000 and more. Infant mortality must also be lowered. The infant mortality of Germany is now 15 to 100 born living; in Norway, it is 7 and in Australia only 5 per cent. Infant mortality is highest in Bavaria. Augsburg shows 21 deaths among infants as against 15 in Berlin and 11 in the Hanse towns. "And certainly," Wolf exclaimed, "the constitution of the Berlin and Hamburg child is no better than that of the Bavarian child." . . . "Pediatrists to the front!"

(3) Emigration to new territory offers another solution which should be considered as a means of furnishing facilities for better means of living and increased incomes.

LONDON LETTER

LONDON, Oct. 29, 1915.

The War

THE TOTAL BRITISH CASUALTIES NOW HALF A MILLION

The total British casualties up to October 9 have just been published. In the western area, that is, France and Belgium, 4,401 officers and 60,059 men have been killed, and 9,169 officers and 225,716 men have been wounded; 1,567 officers and 61,134 men are missing; the greater number of the latter are probably killed. This makes the total casualties 362,046 in the western area. In all fields of operation, 6,660 officers and 94,992 men have been killed; 12,633 officers and 304,832 men have been wounded, and 2,000 officers and 72,177 men are missing. The total British casualties, therefore, were 493,294. At the time of writing, they must have reached half a million.

CHILD LIFE AND THE NATION

The great loss of life in the war has stimulated the recent movement to promote the welfare of motherhood and infancy. A meeting organized by the "Central Economic Guild" of the "Central Committee for the National Patriotic Organization" has been held to inaugurate a campaign with the object of coordinating all the efforts in this direction on national lines. Representatives of the government and prominent philanthropists and physicians were present. Mr. Herbert Samuel, the postmaster general, said that the nations of Europe were engaged in the destruction of life on the most colossal scale known to history. Ready to our hands and obvious was the remedy, so far as this country was concerned, to make good the loss. Much of the mortality among infants was not inevitable, and in addition they must consider antenatal mortality. The saving of these lives was one of the few questions in which the government and the legislature were ahead of the nation. The majority of local authorities showed little activity. Public opinion should be made more vocal. Pressure should be brought to bear on lethargic local authorities, and a greater number of men and women who have the time should throw themselves wholeheartedly into the work of the health associations and other organizations engaged in this movement.

Sir James Crichton-Browne said that up to the present we had irreparably lost at least 150,000 of the flower of our man-

hood, and this waste of human treasure imposed on us the obligation to practice the strictest economy in human life. It was disconcerting to find that the supply of infants was falling off. Having regard to the vital importance to the economic future of the country of copious reinforcement of infant life, attention should be given to the neomalthusian propaganda, which was largely cutting off these reinforcements. Referring to the effect of the industrial occupation of women on prenatal mortality and on the health of the infant, Sir James said that now that we had a larger number of women than ever before engaged in industrial pursuits, we must give them the benefit of the best antenatal hygiene. We wanted, not puny, atrophied, debilitated brats, but promising little pink buds of humanity. That much of the mortality among infants could be prevented was beyond question. Doctors' babies died at the rate of only 40 per thousand in the first year because doctors knew how to look after them, whereas those of miners who did not know how to look after them died at the rate of 160. In conclusion, Sir James suggested that further investigation into antenatal pathology should be made, and that for this purpose stillbirths should be registered and centers of scientific research established.

An American Nostrum in Australia

William W. Dobson, the agent in Western Australia for Radam's Microbe Killer, has been charged at Fremantle with having published a statement in connection with this nostrum which was false. He admitted the offense and pleaded for a light penalty on the ground that he was merely a subagent, and was not responsible for the wording of the pamphlet. The prosecution was based on the fact that Radam's Microbe Killer was vaunted as a cure-all; the venders claimed that it was perfectly safe, and contained no acids. The health department has purchased four bottles at the cost of $5, and it was found that it contained 0.5 per cent. of sulphurous or sulphuric acid, and 99.5 per cent. of water. It was therefore stated that Radam's Microbe Killer was a fraud. It appears that this fluid was manufactured in America, and had proved a failure. Later it reappeared under another name until its importation was prohibited by the commonwealth authority. The proprietor next attempted to import the "Microbe Killer" into the commonwealth, but the federal authority prohibited it as well. The firm thereupon started concocting the "Microbe Killer" in the eastern states. In order to show how serious the result of the false statement in the pamphlet might be, the prosecution announced its intention of calling expert medical evidence. The defendant objected to this on the ground that he had pleaded guilty. The objection was upheld, and the prosecution was therefore prevented from bringing corroboration of the statement that the claims of the venders were untenable. In the end, Dobson was fined $25, with $28 costs.

Marriages

WALTER CHARLES AUGUST STEFFENS, M.D., College Point, N. Y., to Miss Catherine MacDougal of Burlington, Vt., in New York City, October 30.

LIEUT. HENRY L. DAVID, M. R. C., U. S. Army, Fort Terry, N. Y., to Miss Mary A. Story of Canaan, N. H., at New London, Conn., October 14.

JAMES A. RAMSEY, M.D., Arlington, Texas, to Mrs. Fletcher J. Lively of Prineville, Ore., at Fort Worth, Texas, recently.

HARRY ALOYSIUS BISHOP, M.D., Washington, D. C., to Miss Roberta Morgan at Fort H. G. Wright, N. Y., October 6.

RAYMOND CANFIELD DODD, M.D., Glen Ridge, N. J., to Miss Edna Houston Jones of Bloomfield, N. J., October 12.

LOWELL MASON CAMPBELL, M.D., Minneapolis, Minn., to Miss Elda Bishop of Dodgeville, Wis., November 3.

WILLIAM SWEENY STUCKY, M.D., to Miss Anne Clay McDowell, both of Lexington, Ky., November 15.

JOHN IRA SPOONER, M.D., to Miss Annette Beneta Fölmar, both of Donalsonville, Ga., November 2.

GEORGE CARROLL SMITH, M.D., St. Louis, to Miss Margaret Clare Shirley of Chicago, November 6.

CONSTANTINE THEODORE, M.D., to Miss Marion Cronin, both of Chicago, November 6.

JOHN GEORGE WILLIAMS, M.D., to Miss Angela Sause, both of Brooklyn, November 3.

Deaths

Edward Livingston Trudeau, M.D. College of Physicians and Surgeons in the City of New York, 1871; a pioneer in the fresh air treatment of tuberculosis; died at his home in Saranac Lake, N. Y., November 15, aged 67.

Dr. Trudeau was born in New York, Oct. 5, 1848, the son of Dr. James and Cephise (Berger) Trudeau. A year after his graduation in medicine he began practice in New York City, but on account of tuberculosis of the lungs was forced to leave his work. He decided to go to the Adirondacks, and established a home at Saranac Lake. His belief in the efficacy of fresh air in the treatment of incipient tuberculosis worked so well in his own case, that in 1884 he founded the Adirondack Cottage Sanatorium for the Treatment of Incipient Tuberculosis in Working Men and Women, the first institution of its kind to be established in the United States.

The theories of Dr. Trudeau there first put in practice are now acknowledged the world over, and the best testimonial to the worth of the treatment is the immense number of those who have graduated, cured, from the institution. Ten years after he founded the Adirondack Cottage Sanatorium Dr. Trudeau established the Saranac Laboratory for the Study of Tuberculosis, the first research laboratory on this subject to be established in the United States. He continued in charge of both of these institutions until his death.

Dr. Trudeau was given the honorary degree of M.Sc. by Columbia University in 1899, and the degree of LL.D. by McGill University, Montreal, in 1904, and nine years later by the University of Pennsylvania. In addition to his fellowship in the American Medical Association and New York Academy of Medicine, Dr. Trudeau was a member of the Association of Pathologists and Bacteriologists, the Association of American Physicians and the American Climatological Association. He was the first president of the National Association for the Study and Prevention of Tuberculosis. In 1908, a "Festschrift" containing contributions on tuberculosis by his co-workers in the Saranac Laboratory was dedicated to him in honor of his sixtieth birthday.

He was widely known throughout the country, not only on account of the plucky fight which he made for more than forty years against tuberculosis, but because of his prolific contributions to the literature of the subject. His last illness began with an attack of pneumonia at Paul Smith's in the Adirondacks about two months ago.

Christian Berry Siemen, M.D. Medical College of Ohio, Cincinnati, 1875; aged 75; a Fellow of the American Medical Association; for a quarter of a century chief surgeon of the Pennsylvania System at Fort Wayne; dean of the Fort Wayne College of Medicine and for many terms a member of the board of regents of the University of Indiana; once president of Taylor University and for two years professor of surgery in the University of Kansas; one of the most prominent and esteemed surgeons of the Middle West; died at his home in Fort Wayne, Ind., November 13.

George F. Chittenden, M.D. University of Louisville, Ky., 1855; aged 84; assistant surgeon of the Sixteenth Indiana Volunteer Infantry and later medical director of General A. J. Smith's Division of the Thirteenth Army Corps, and medical director of Camp Morton, Indianapolis, after his resignation from the service; representative from Madison and Henry counties in 1868 and a commissioner of the State Hospital for the Insane five years later; died at the home of his daughter in Anderson, Ind., October 31.

Perry Jaffa, M.D. Gross Medical College, Denver, 1900; aged 45; a Fellow of the American Medical Association and formerly vice president of the Colorado State Medical Society and secretary of the Las Animas County Medical Society; city physician, health officer and secretary of the Board of Health of Trinidad, Colo.; local surgeon of the Colorado and Wyoming Railroad and Colorado Fuel and Iron Company; died at the home of his brother in Denver, November 2, from heart disease.

Hermann E. Hasse, M.D. University of Würzburg, Germany, 1861; aged 79; major and surgeon of the Twenty-Fourth Wisconsin Volunteer Infantry during the Civil War; an authority on botanical subjects and especially lichens; the author of a monograph on the Lichens of Southern California, published by the Smithsonian Institute; for seventeen years chief surgeon of the Soldiers' Home, Santa Monica, Calif.; died at his home in that city, October 30.

Joseph P. LeFevre, M.D. University of California, San Francisco, 1881; aged 60; formerly a Fellow of the American Medical Association and superintendent of the San Francisco City and County Hospital; local surgeon at Venice, Calif., for the Pacific Electric Company; who was seriously injured in a collision between his automobile and an electric train near Venice; died from his injuries, October 30.

Raymond Claude Fout, M.D. University of Maryland, Baltimore, 1901; aged 37; of Kemptown, Md.; formerly a member of the Medical and Chirurgical Faculty of Maryland; president of the Mount Airy People's Lumber and Supply Company; died in the Baltimore Eye, Ear and Throat Charity Hospital, November 2, from posttonsillar abscess for which operation was being performed.

Sigmund Tynberg, M.D. College of Physicians and Surgeons in the City of New York, 1885; aged 51; a Fellow of the American Medical Association; for several years a member of the staff of the City Hospital, Blackwell's Island, N. Y., and president of the medical board of that institution; died in St. Luke's Hospital, New York City, November 3, from arteriosclerosis.

Francis M. Perkins, M.D. Indiana University School of Medicine, Indianapolis, 1911; aged 26; a member of the Indiana State Medical Association; a well-known practitioner of Pennville and Kendallville, Ind.; captain of Company B, Third Infantry, Ind. N. G.; died in Swan, Ind., November 1, from injuries received in the overturning of his automobile.

Myra Wheeler Knox, M.D. Cooper Medical College, San Francisco, 1884; aged 62; formerly a member of the Medical Society of the State of California; for twelve years a member of the Oakland (Calif.) Board of Education; physician to the State Home for the Blind; died in the Merritt Hospital, Oakland, October 31, from cerebral hemorrhage.

George Richard Montgomery Kuhn, M.D. Long Island College Hospital, Brooklyn, 1872; aged 68; a member of the Medical Society of the State of New York; pathologist, physician, secretary and once president of the staff of St. Mary's Hospital, Brooklyn; also a graduate in pharmacy; died at his home in Brooklyn, November 5, from cerebral hemorrhage.

William Hill Neel, M.D. University of Nashville, Tenn., 1860; aged 79; surgeon of the Twenty-Fourth Tennessee Infantry, C. S. A., during the Civil War; for twenty-two years a practitioner of Sumner County, Tenn., but since that time a resident of Mayfield, Kan.; died at his home in Mayfield, October 21, from cerebral hemorrhage.

Frank Herbert Daniels, M.D. Harvard Medical School, 1884; aged 59; a Fellow of the American Medical Association and vice president of the American Jurisprudence Society; for many years visiting physician to the J. Hood Wright Hospital, New York City; died at his home in New York, October 30, from heart disease.

Harry W. Barber, M.D. University of Vermont, Burlington, 1906; aged 35; a Fellow of the American Medical Association; anesthetist and assistant surgeon to St. Mary's Hospital, Rochester, N. Y.; one of the most promising young surgeons of Rochester; died at his home, November 2, from angina pectoris.

William M. Bartley, M.D. Baltimore Medical College, 1895; aged 46; a Fellow of the American Medical Association and one of the most prominent practitioners of North Dakota; coroner of Eddy County and a member of the legislature; died at his home in Sheyenne, November 6, from diabetes.

John B. McDill, M.D. Medical College of Ohio, Cincinnati, 1859; aged 81; formerly of Camp Grove, Ill.; assistant surgeon of the Sixty-Seventh Ohio Volunteer Infantry during the Civil War; died in the National Military Home, Danville, Ill., October 9, from arteriosclerosis.

George Andrews Hood (license, years of practice, North Carolina, 1895), aged 44; vice president of the Parrish-Godwin Company, Benson, N. C.; for many years a practitioner and druggist of Kenly, N. C.; died at his home, October 30, from rheumatism.

Patrick V. Dolan, M.D. Georgetown University, Washington, D. C., 1890; aged 56; for thirty years a law clerk in the Treasury Department, Washington; died in St. Vincent's Hospital, Norfolk, Va., October 30, from shock following the amputation of his leg.

Robert Luther Willis, M.D. Bellevue Hospital Medical College, 1875; aged 68; formerly superintendent of the Eastern Kentucky State Hospital, Lexington, Ky.; died in his office in Lexington, November 6, from cerebral hemorrhage.

Alonzo Cooper Kellogg, M.D. Bellevue Hospital Medical College, 1887; aged 70; a practitioner of Portage, Wis., for forty-five years; for nearly twenty years superintendent of schools of Portage; died at his home in that city, October 31, from cerebral hemorrhage.

James M. Bradbury, M.D. Washington University, St. Louis, 1869; aged 76; of Coaldale, Colo.; a veteran of the Civil War; for many years a practitioner of Canon City, Colo.; died in the Red Cross Hospital, Salida, Colo., October 27, from pneumonia.

Henry Johnson, M.D. University of Michigan, Ann Arbor, 1867; aged 79; formerly a Fellow of the American Medical Association; surgeon of the Sixth Michigan Volunteer Cavalry during the Civil War; died at his home in Caseville, Mich., October 17.

Charles Shannon Butts, M.D. New York University, New York City, 1889; aged 43; a member of the Medical Society of Virginia and an esteemed practitioner of Newport News, Va.; died in a hospital in Oklahoma City, October 6, from typhoid fever.

John J. Youtsey, M.D. Northwestern University, Chicago, 1876; aged 75; for fifty-one years a resident of northern Colorado; and a pioneer practitioner of Larimer County; died at his home in Loveland, Colo., October 13, from acute gastritis.

Solomon Henry Secoy, M.D. Medical University of Ohio, Cincinnati, 1888; aged 74; a veteran of the Civil War; a practitioner for forty-five years; died at the home of his daughter in Jeffersonville, Ind., October 31, from cerebral hemorrhage.

William Wallace Chisholm, M.D. Hahnemann Medical College, Philadelphia, 1915; aged 21; an intern in the Hahnemann Medical College, Philadelphia; died in that institution, October 29, from septicemia.

Eugene A. Grove, M.D. University of Pennsylvania, Philadelphia, 1870; aged 65; for twenty-five years a practitioner of Carlisle, Pa.; died at his home in that place, October 23, from cerebral hemorrhage.

William Henry Scott, M.D. Berkshire Medical College, Pittsfield, Mass., 1862; aged 83; for more than half a century a practitioner of Manhattan and Brooklyn; died at his home in Brooklyn, October 27.

Samuel Watson Bragg, M.D. University of Vermont, Burlington, 1879; aged 55; a practitioner and druggist of Lincoln, Me., died at his home in that place, August 9, from cerebral hemorrhage.

Louis A. Monmonier, M.D. University of Maryland, Baltimore, 1864; aged 71; of Waverly, Baltimore; died at the home of his niece in Baltimore, October 26, from cerebral hemorrhage.

Eugene V. Chase (license, Michigan), aged 82; a member of the State Legislature of Michigan from 1877 to 1880; died at his home in Elsie, Mich., September 26, from intestinal obstruction.

James W. Kirkwood, M.D. University of Louisville, Ky., 1873; aged 64; of Wichita, Kan.; formerly a member of the staff of the Wichita Hospital; died suddenly in Wharton, Texas.

Frederick H. Flynn, M.D. College of Physicians and Surgeons, San Francisco, 1912; aged 35; died in Los Angeles, August 27, from asphyxiation believed to have been suicidal.

Benjamin H. Chedeck, M.D. Minneapolis College of Physicians and Surgeons, 1903; aged 36; of Omaha; died in Somers, Wis., August 16, from cerebral meningitis.

D. R. Blair (license, Texas, years of practice, 1907), aged about 50; of Denison, Texas; died in Sherman, Texas, about August 25, it is said from drug addiction.

Harvey N. Abbott, M.D. University of Pennsylvania, Philadelphia, 1878; aged 59; died at his home in Philadelphia, October 25, from cerebral hemorrhage.

Augustus W. Crow, M.D. College of Physicians and Surgeons, Baltimore, 1875; aged 64; died at his home in Livia, Ky., July 18, from tuberculosis.

J. M. Saunders, M.D. Medical College of Georgia, Augusta, 1853; aged 89; died at his home in Winder, Ga., September 26, from nephritis.

Joseph Lawson Porter, M.D. Rush Medical College, 1881; aged 61; died at his home in Paola, Kan., September 10, from pernicious anemia.

James K. P. Idol, M.D. Washington University, St. Louis, 1872; died at the home of his daughter in Alden, Kan., October 22.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

FRAUDULENT MEDICAL INSTITUTES IN NEW YORK

The State Department of Labor of New York, in connection with the Bureau of Industries and Immigration, has been making an investigation of some of the fraudulent "medical institutes" in New York City. A report issued by the department contains a brief account of what has been accomplished in the protection of immigrants and aliens who have been made the especial prey of these frauds. A description is given of the methods of these medical fakers. They open sumptuous offices under high-sounding names and place advertisements in the foreign-language press. They also distribute circulars, in all languages, throughout the immigrant section of the city of New York, calling attention to the wonders of the "institute." These circulars and advertisements are so worded as to give the impression that the institute is a charitable organization with advice and consultation "absolutely free"—a charge being made for medicine only. What happens to a person who consults the swindlers who run these institutes is thus described in the report:

"The applicant is ushered into a private office. To comply with the law a registered physician, under whose name the 'institute' operates and who is very often only an instrument in the employ of an unregistered financial backer, in addition to two or three interpreters, all representing themselves as physicians, take the patient in hand. He is placed before a large machine of complex appearance that conveys the impression to the ignorant immigrant of being costly and almost miraculous, and is examined by the two or more interpreters, who dramatically and with apparent emotion inform the patient that he is suffering from some dreadful disease, which if longer neglected, will result in death. The patient becomes alarmed and agrees to pay any price for a cure, which is guaranteed. A large sum is at first requested as part payment, but any amount that the patient has or can obtain is accepted. It is unnecessary to state that the so-called examination and later 'treatment' are absolutely without merit, and that unregistered assistants are acting as physicians and 'treating' the patient. No prescriptions are given, as the so-called 'institute' provides all medicines and medicinal appliances."

The report also describes the "wax museum" method of roping in the unsuspecting immigrant. It is said, also, that some of these "institutes" and "museums" publish newspapers and books that are extensively distributed, describing the marvelous cures accomplished.

"It is not uncommon for these 'physicians' to resort to forgery, trickery or any other device in order to obtain the savings of their unfortunate victims. They have been known to take bank books and withdraw entire deposits on such orders. Persons convicted in various states for similar practices are now operating in New York City."

One of the so-called "professors," in one of these institutes, who was not a registered physician, confessed to a representative of the bureau that before examination patients are asked to undress in an anteroom where their clothes are searched for bank books, money, etc., to enable the fakers to estimate the size of the fee they shall demand. The victims are invariably told that they are suffering from some dangerous ailment, and the report cites instances in which the victims who had been robbed of all their money were found by reputable physicians to be suffering from no disease at all. Details of a number of such instances are given in which the representatives of the bureau were enabled to recover large sums of money from these fakers. Although it is expensive and troublesome, the bureau has been able to secure evidence in many instances against these fraudulent institutes. It is estimated that thousands of people, especially immigrants, are daily victims of these leeches. One "institute," which was compelled to disband through the efforts of the bureau, had an enrolment of about 14,000 patients.

SOME MISCELLANEOUS NOSTRUMS FOR EXTERNAL APPLICATION

HILL'S FRECKLE LOTION

"Hill's Freckle Lotion" is said to be put on the market by J. V. Hill, Providence, R. I. The state chemists in the Report of the Connecticut Agricultural Station state that analysis showed the preparation to be a solution of corrosive sublimate and water in the strength of 1.84 per cent. bichlorid of mercury. According to the same report, the following claims were made for this product:

". . . is absolutely harmless when used externally according to directions."

"Removes moth, tan, freckles, pimples, ringworms and all eruptions of the skin."

As the Connecticut chemists say, Hill's Freckle Lotion "is an extremely dangerous preparation."

KINGSBERY'S FRECKLE LOTION

"Kingsbery's Freckle Lotion (1st. strength)" is said to be put on the market by E. W. Kingsbery, Randolph, Mass. According to the Report of the Connecticut Agricultural Experiment Station, 1914, the following claims have been made for this product:

"Will positively remove freckles, tan, moth patches, etc., from the face, hands and arms without the slightest injury to the most sensitive skin."

"Unequalled for use in ivy and dogwood poison, insect bites and stings, salt rheum, eczema and all skin irritations, stopping the itching immediately and counteracting the poison."

Kingsbery's Freckle Lotion was analyzed by the state chemists of Connecticut who reported that it, like "Hill's Freckle Lotion," is a solution of bichlorid of mercury in water, containing 5.3 parts of the corrosive sublimate to 1,000 parts of water. As the Connecticut officials state this "is an exceedingly dangerous remedy to use." The use of the poisonous salts of mercury, even externally, is fraught with danger. There are numerous cases on record of poisoning from the external application of mercurial compounds. Taylor quotes a case of two brothers who died from the effects of absorbing corrosive sublimate through the unbroken skin. Death has followed the absorption of corrosive sublimate in dilutions of 1 to 1,000 and 1 to 2,000.

KULUX COMPOUND

Kulux Compound is sold by the Kulux Manufacturing Company, Rochester, N. Y., a concern that is apparently another of the numerous schemes emanating from the fertile brains that have conceived and executed many mail-order frauds. Our readers will call to mind such companies as the fraudulent "New York Institute of Science," the equally fraudulent "Cartilage Company," to say nothing of the "Okola Laboratory" swindle, the "Dr. Turner Obesity Cure" and a number of other concerns of similar type. Kulux Compound has been advertised on the "prescription fake" method under such claims as the following:

"Makes the skin transparent and removes all defects such as freckles, tan, sun-spots, roughness and ruddiness."

"Blemishes of every kind disappear as if by magic."

"This is the private prescription of a famous Parisian beauty."

The alleged "prescription" calls for a "1 ounce bottle of Kulux Compound" which is to be added to a mixture of water and witch hazel. Kulux Compound has been reported on by several state chemists. The following, taken from the "Medical Frauds" bulletin issued by the Indiana State Board of Health may be taken as typical:

Zinc oxid	7 per cent.
Bismuth subcarbonate	5 per cent.
Glycerin	10 per cent.
Water	78 per cent.

The Indiana chemists state further that although the retail price of Kulux Compound is 50 cents, the value of the ingredients is 4 cents.

MRS. MCCORRISON'S FAMOUS DIAMOND LOTION NO. 1

According to the report of the Connecticut Agricultural Experiment Station for 1914, Mrs. McCorrison's Famous Diamond Lotion No. 1 is put on the market by E. K. Guenther of Waldoboro, Maine, under the following claims:

"Will remove Moth, Tan, Freckles, Pimples, Blackheads, Salt-Rheum, Eczema and all the various affections of like character."
"It is unlike any other preparation for the skin and complexion."

The Connecticut chemists reported that it was essentially a solution of bichlorid of mercury in the strength of 28.2 parts of the corrosive sublimate to 1,000 of water. The stuff is a dangerous poison.

NEROXIN

Neroxin is another one of the numerous "prescription fake" nostrums put out by the Cooper Pharmacal Company of Chicago. As has been mentioned before, the Cooper concern exploits its frauds in fake "Beauty Departments" under the name "Valeska Suratt." Here, for instance, is a paragraph from an advertisement put in the form of reading matter and supposed to be devoted to "Secrets of Remarkable Formulas Revealed by Valeska Suratt."

"Blackheads will be removed in a few minutes by first washing the face, then sprinkling some neroxin on the sponge, wet with hot water, and rubbing over the blackheads for a few minutes. Then wash the face again. The neroxin can be procured for fifty cents at any drug store."

According to the bulletin on "Medical Frauds" issued by the Indiana State Board of Health, Neroxin contains:

Borax	55 per cent.
Soda	25 per cent.

According to the same authority, Neroxin retails for 50 cents; the value of the ingredients is 3 cents.

OTHINE

Othine is put on the market by a concern calling itself the "Othine Laboratories, Buffalo," which claim to be the "proprietors of Mrs. E. C. White's Famous Prescription, Othine-Double Strength." Othine is sold as a "remover of freckles" and such claims as the following are to be found among the advertising:

"Othine is altogether unlike the old-fashioned skin remedies, complexion bleaches, lotions, etc., which irritate the skin beyond endurance."
"It is absolutely harmless to the most delicate complexion. . . ."
"If it contained a single injurious ingredient I certainly would not put it on my face."

Othine can be purchased at the drug stores—$2 for a 2½-ounce jar. Those who have written to the "Othine Laboratories" for information, have received a series of circular letters signed "Mrs. E. C. White." In the first letter the correspondent was told:

"It requires at least a box of Othine to remove freckles. Samples would be too small to accomplish anything, therefore, I do not send them; so please do not write me for samples. The full treatment of Othine will be sent you in a plain wrapper, charges prepaid on receipt of $2.00."

Some time later—the $2 not having been sent—another letter came from the "Othine Laboratories" offering the 2½-ounce jar of Othine for $1. This offer also was ignored and in due time a third letter came in which the offer was made that a 1-ounce package of Othine would be sent for 50 cents!

Othine has been reported on by the state chemists of Connecticut, Indiana and Kansas. The reports all agree in essentials. According to the Connecticut chemists, Othine contains 7.7 per cent. bismuth subnitrate and 11.5 per cent. ammoniated mercury with a fatty base. Ammoniated mercury is a powerful caustic poison and it is little less than criminal that a product containing it should be sold under the claim that it is "absolutely harmless to the most delicate complexion."

Correspondence

An Important Rule for the Operating Room

To the Editor:—Never allow any relatives or friends of the patient to be present at a painful operation; nor at one requiring a general anesthetic. I adopted this rule twenty-five years ago, and its advantages have been so manifest that I cannot understand why it is not universally followed. So far as I know, it has cost me only one patient directly. One mother would not permit an operation on her child unless she could be present; but she was the only one of the sort. Indirectly it has probably cost me a few more. I have heard that some people think it very queer that "Dr. Gifford will not allow any relatives to be there"; but the statistics of my clinic do not indicate that any large number have stayed away on that account. When they object, I explain to them as kindly as possible that some people cannot control themselves at an operation, and that while I feel quite certain that they, in particular, would not be troublesome, still, a rule is a rule and must be enforced to avoid the appearance of partiality. Since I have learned to modulate my voice this has always worked.

I consider this rule an important one because it is best for the relatives, for the surgeon and for the patient. It is best for the relatives because it saves them the shock of witnessing the struggles and groans of the semiconscious patient. It is best for the doctor because it relieves him of the influence which the presence of anxious relatives always exerts. Generally this influence is merely depressing; but sometimes it is positively disturbing, as in one of the cases of my early practice, when a stalwart father stood by and encouraged me saying, "By Heaven, Doc, if you hurt my boy's eyes I'll kill you!" I think it was this case that made me adopt the rule. Moreover, if anything goes wrong with the anesthetic or the operation and you think the patient may be going to die, you all know how pleasant it is to have one or more relatives right at hand. Finally, and most important of all, the rule works in the best interests of the patient by leaving the mind of the surgeon free to follow the dictates of his reason and his conscience, regardless of appearances. There doubtless are surgeons of strong enough fiber to be above such influences; but I can easily conceive a situation in which the operator might swerve a little from the proper procedure because, to a relative, it would seem brutal or reckless; and in case of a bad result, he would be blamed. Even aside from such ticklish situations, I think it will be readily admitted that in all serious operations the surgeon will, in the long run, be better able to give the case the proper consideration if he is free from the bother which the presence of relatives produces. I am quite sure that many others follow this rule, but it is by no means as generally adopted as it should be. It ought to be practically universal, so that the public may be educated on the point and the young surgeon will not be afraid to enforce it.

HAROLD GIFFORD, M.D., Omaha.

Does the Cornea Aid in Accommodation?

To the Editor:—I have searched repeatedly for a statement that the cornea was concerned with the accommodation of the eye in vision, but so far in vain. When using the ophthalmometer in looking for astigmatism in children, I frequently see the cornea become more or less convex, in response to accommodation, sometimes as much as from 1 to 4 diopters. The ciliary muscle is circular—a sphincter muscle, so to speak. It acts at the edge of the cornea, and the eyeball is more or less elastic. When the ciliary muscle contracts to take the tension off the lens, it makes the cornea bulge or become more convex, thus aiding in the act of accommodation. Stress has been laid on the idea that the lens is the great factor in bringing the rays of light to a point on the retina, when the truth is that it does only four fifteenths of the work, the remaining eleven fifteenths being done by the

cornea and aqueous. It may be asked why the young patient having cataract operation has lost all his power of accommodation. In reply I would ask why the person receiving a blow on the eye sometimes loses all his power of accommodation at once, and the eye becomes myopic and the pupil dilated with all the eye structures apparently physically intact.

C. S. MINNICH, M.D., Palmer, Neb.

[COMMENT.—The foregoing theory of accommodation would be decidedly interesting and of undoubted value if the observations could be backed up by facts. This does not seem to be the case so far as these observations have a bearing on the actual mechanism of accommodation. The annular portion of the ciliary muscle, which has most to do with the relaxation of the suspensory ligament of the lens, is separated from the sclerocornea by the radiating fibers of that muscle, and it is difficult to see how the annular portion can exercise any action on the cornea: while the longitudinal portion of the muscle, having its origin near the sclerocorneal margin, is fixed at this point, so that when it contracts, its action is to bring the parts situated at its insertion in the direction of the origin of that muscle; that is, the movement is forward rather than backward. Thus it can have very little if any action in altering the shape of the cornea.

The radius of curvature of the cornea, when seen through the ophthalmometer, sometimes appears to change to a slight degree; but this can be caused by ever so slight a movement of the patient's head if it is not held absolutely firm against the head-rest of the instrument.

In referring to the indexes of refraction of the different mediums of the eye, our correspondent is confusing refraction with accommodation. No one will deny that the cornea and other mediums of the eye have much to do with refraction, but the mechanism of accommodation is an entirely different thing. The illustration used—of the absence of accommodation after the removal of the lens—proves conclusively that this act was accomplished by the lens; and loss of accommodation in an eye that has received a blow, when "the pupil is dilated, with all the eye structures apparently intact," indicates that the blow destroyed that branch of the third nerve which supplies the ciliary muscle and the sphincter iridis, resulting in the dilated pupil and absolute loss of accommodation.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MECHANISM OF DEATH IN NEPHRITIS, ARTERIOSCLEROSIS AND ERYSIPELAS—EFFECT OF GROUND GLASS

To the Editor:—A medical witness was asked in court to describe to the jury the mechanism of death in (1) chronic nephritis, (2) arteriosclerosis and (3) erysipelas. (4) Now and then I read and hear of ground glass being employed because of its celerity of action. I have always thought this to be one of the many semimedical myths, and shall appreciate an explanation of this belief.

C. P. FRISCHBIER, M.D., Brooklyn.

ANSWER.—1. It is believed that the cause of death in chronic nephritis is poisoning with the substances, their derivatives and antecedents, which, with healthy kidneys, are excreted by the urinary organs. The alterations in the body following death from nephritis indicate that there is a failure of the heart to maintain the circulation, and that this is accompanied by severe alterations in the central nervous system. The exact mechanism of death in nephritis will be better understood when the chemistry of this poisoning is fully demonstrated.

2. Death from arteriosclerosis, when uncomplicated by other serious diseases, such as cerebral hemorrhage, extensive renal alterations, etc., is usually "death from old age," although its development varies greatly according to the age of the individual. The ultimate mechanism is, of course, not the same in every instance.

3. Death from erysipelas is, if uncomplicated, due to the poisonous action of the toxins of this disease. The chemical nature of the toxins being as yet unknown, the mechanism of their action is unexplained.

4. Ground glass is mentioned among the mechanical poisons in comprehensive works on forensic medicines and toxicology. A finely ground glass like meal is regarded by some as harmless. When coarsely ground the mechanically produced lesions of the lining of the gastro-intestinal canal resemble a catarrhal and hemorrhagic inflammation. Death may be due to perforation of the stomach or bowel or to infection of the wounded places and extension of the inflammation.

FRAUDULENT CANVASSERS AND COLLECTORS

To the Editor:—Have you any agents or representatives of the poor student type who are making Herculean efforts to work their way through college by soliciting subscriptions to THE JOURNAL? This territory has been pretty well explored by an individual who professed to be authorized to solicit subscriptions. He claimed to be representing the Michigan Educational Association of 503 Woodward Street, Detroit. May I bear from you in regard to this matter?

HENRY T. KELLY, M.D., White Plains, N. Y.

ANSWER.—We have repeatedly published warnings against fraudulent canvassers and collectors—sometimes in the Miscellany, sometimes in the News and sometimes in the Editorial department. We print the foregoing letter again to emphasize—and under Queries and Minor Notes—the need of being on the watch for this class of swindlers. This letter from Dr. Kelly is merely one of many which we have received.

In the past we have referred specifically to this scheme operated under the title "Cornell Educational Association," according to which the solicitor presents himself as a contestant for a scholarship offered by an organization of this name. The same plan is worked under other names, as for instance the "National Educational Association," the "Michigan Educational Association," etc. The form used in the last-named plan was reproduced in THE JOURNAL, Oct. 23, 1915, p. 1472.

ANAPHYLAXIS TO EGG ALBUMIN

To the Editor:—Recently I was consulted by a patient who was unable to take the smallest amount of egg in any form. If a spoon was used to beat eggs and then to stir his coffee, he became very much nauseated, and vomited violently, the symptoms being much like anaphylactic shock. Would injections of small quantities of egg at first with gradual increase of dosage create a resistance? F. C. HODGES, M.D., Richmond, Va.

ANSWER.—Such instances are typically anaphylactic and, therefore, susceptible to the same type of treatment as other instances of anaphylaxis. The following are references to recent literature on the subject:

Besredka, A., and Bronfenbrenner, J.: Anaphylaxis and Antianaphylaxis to Egg Albumin, *Ann. de l'Inst. Pasteur*, May 25, 1911.

Koessler, K. K.: Bronchial Asthma Due to Hypersusceptibility to Hen's Eggs, *Illinois Med. Jour.*, January, 1913.

Lesné, E., and Richet, C.: Alimentary Anaphylaxis to Eggs, *Arch. de méd. d. enf.*, February, 1913.

Miller, S. R.: Koplik's Spots on Tonsils of a Child Found to be Anaphylactic to Egg-Albumin, *Bull. Johns Hopkins Hosp.*, March, 1914.

Bronfenbrenner, J.; Andrews, V. L., and Scott, Z. R.: Nature of Idiosyncrasy to Egg-Protein in Human Beings, THE JOURNAL, April 17, 1915, p. 1307.

Rich, H. M.: Infantile Sensitization to Egg Albumin, *Michigan State Med. Soc. Jour.*, November, 1914.

Talbot, F. B.: Asthma in Children: Its Relation to Egg Poisoning, *Boston Med. and Surg. Jour.*, Nov. 5, 1914; abst., THE JOURNAL, Nov. 21, 1914, p. 1880.

ANESTHESIN

To the Editor:—What is the composition of anesthesin? Does it contain any narcotic or cocain? Is it under the ban of the Harrison Narcotic Law? CHARLES W. KNOX, M.D., Indianapolis.

ANSWER.—Anesthesin is ethyl aminobenzoate, the ethyl ester of paraminobenzoic acid. As stated in New and Nonofficial Remedies (p. 30), anesthesin is one of the products which owe their existence to the discovery that the local anesthetic action of cocain is due to the radical of benzoic acid in combination with a nitrogen-containing basic group. On the whole, however, the constitution of anesthesin differs widely from that of cocain.

Treasury Decision 2194 requires the registration of any "artificial substance or preparation which is or may be substituted for cocain, alpha or beta eucaine, or any of their salts as ordinarily prescribed or used, and not necessarily to a purely synthetic substitute which, chemically, is identically the same as the drug for which it may be so substituted." This ruling evidently is intended to include anesthesin.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

California: Los Angeles, December 14. Sec., Dr. Charles B. Pinkham, Room 527 Forum Bldg., Sacramento.

Delaware: Dover and Wilmington, December 14. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

Florida: Jacksonville, December 7-8. Sec., Dr. E. W. Warren, 102 Front St., Palatka.

Kentucky: Louisville, December 7-9. Sec., Dr. A. T. McCormack, Bowling Green.

Louisiana: New Orleans, December 2-4. Sec., Dr. E. L. Leckert, 716 Macheca Bldg., New Orleans.

Maryland: Regular, Baltimore, December 14. Sec., Dr. J. McP. Scott, Hagerstown. Homeopathic, Baltimore, December 15-16. Sec., Dr. O. N. Duvall, 1817 N. Fulton Ave., Baltimore.

Missouri: St. Louis, December 13-15. Sec., Dr. J. A. B. Adcock, State House, Jefferson City.

Ohio: Columbus, December 7-9. Sec., Dr. George H. Matson, Columbus.

Virginia: Richmond, December 14-17. Sec., Dr. J. N. Barney, Fredericksburg.

Medical Cults in Ohio

In Ohio the medical cult situation has about reached the limit of absurdity. Fourteen of these cults are specifically mentioned in the new license law, and others are provided for by the terms "any other similar branch of medicine and surgery that may now or hereafter exist and not here specified." The Ohio legislature did a sane thing, however, in having them all placed under the jurisdiction of the state board, thereby placing supervision of all practitioners of the healing art in a single board. In no other way would the public be protected against gross ignorance and incompetence on the part of practitioners of these various cults. Needless to say, the Ohio board will have its hands decidedly full. It has become its duty to work out many of the details for the control of these cults, and its experiences will undoubtedly be of value to other state boards, which sooner or later may have to deal with the same problems. At a recent meeting of the Ohio board, official definitions[1] were adopted for each of the medical cults, which have been classified in five groups as follows:

Group 1

Chiropractic is understood to be the detecting and adjusting by the hand of vertebral subluxations.

Naprapathy is understood to be the detection and correction, by the hands only, of diseased spinal connective tissue or ligaments.

Spondylotherapy is understood to be the examination, by palpation, of the spinal column for disease and its treatment by percussion, traction, vibrotraction, or vibration, and concussion.

Electrotherapy is understood to be the administration of electricity in any form for the relief or cure of the sick.

Hydrotherapy is understood to be the administration of water for the relief or cure of the sick.

Neuropathy is understood to be the specific treatment of the nerves by manual or physical therapeutic measures.

Mechanotherapy is understood to be the administration of manual, physical or mechanical therapeutic measures for the relief of the sick.

Group 2

Suggestive therapy is understood to be the treatment of disease by suggestion.

Psychotherapy is understood to be the treatment of disease by making mental impressions or suggestions.

Magnetic healing is understood to be the treatment of disease by applied suggestion.

Certificates authorizing practice under Group 1 or Group 2 permit the holders to examine and diagnose, and to assume responsibility for the care of the patient, but the holders must limit their practice to the branch or branches of medicine or surgery specified in the certificates.

Group 3

Massage is understood to be a systematic therapeutic friction stroking, kneading, or manipulation of the body.

Swedish movement is understood to be the treatment of disease by movements or exercise.

The two foregoing classifications include:

Medical gymnastics, which is understood to be systematic therapeutic muscular exercises.

Vibromassage, which is understood to be massage by rapidly repeated light percussion with a vibrating hammer or sound.

Electromassage, which is understood to be massage by means of an electric vibrator.

Heliotherapy, which is understood to be the exposure of the body to the sun's rays, or to the rays of light, as a therapeutic measure.

Thermotherapy, which is understood to be the application of heat as a therapeutic measure.

Electric light bath, which is understood to be the exposure of the body to electric lights, or other therapeutic rays, as a therapeutic measure.

Certificates authorizing practice under Group 3 do not permit the holders to examine, diagnose or assume responsibility or care of patients. Holders of these certificates must limit their practice to the branch or branches of medicine or surgery specified in the certificates.

Group 4

Chiropody is understood to consist of surgical treatment of ailments of the hand or foot, nonsystematic or infected in character. It shall also include the fitting, prescribing or recommending of appliances, devices or shoes for the cure, correction or relief of minor foot ailments.

Certificates authorizing the practice of chiropody permit the examination of the appropriate parts and diagnosis, but do not confer the right to operate on the hands or feet for congenital or acquired deformities, or for conditions requiring the use of general anesthetics or which require incision below the level of the skin. Holders of certificates authorizing the practice of chiropody must conform in their practice to the definition of chiropody as here given.

Group 5

Optometry is understood to be the employment of any measure other than the use of drugs, for the measurement of the powers of vision and the adaptation of lenses for the aid thereof.

Certificates authorizing the practice of optometry permit examination of the eye, but aside from the fitting of glasses do not permit any treatment of whatever nature for diseased conditions either local or general. Holders of certificates authorizing the practice of optometry must conform to the definition of optometry as here indicated.

Limitation of Practice

Those who receive licenses to practice one or more of these branches will be limited closely to the practice of the branches specified in their certificates, in conformity with the definitions as herein given, and will not be permitted to practice any other branch—even though the second branch is in the same grouping. For example, a man licensed to practice spondylotherapy will be forced to confine his practice to the "examination, by palpation, of the spinal column" for the cause of the disease, and will also be permitted to treat "by percussion, traction, vibrotraction or vibration and concussion." He will not be permitted to administer electric treatments, unless he is also licensed as an electrotherapist, or to use hydrotherapeutic measures, unless he is also licensed as a hydrotherapist. In his practice he will be confined strictly to the definitions given above, and encroachment on other fields will subject him to revocation of his limited license. This point will be emphasized by the parchment licenses to be issued by the board. They will bear in bold letters an exact statement of what the practitioner may do.

Educational Requirements

The board has established minimum educational requirements for those who seek to enter any of the "limited fields" after Oct. 1, 1915, the final date fixed for applying under the exemption clauses. These requirements, as announced by the board, are as follows:

Groups 1 and 2

Those who make application to practice any limited branch or branches of medicine or surgery under Group 1 or 2 after Oct. 1, 1915, must submit documentary evidence of:

1. As published in the Ohio State Medical Journal, September, 1915, with modifications by the Ohio State Medical Board.

(*a*) Preliminary education received prior to entering on the study of a limited branch of medicine or surgery equal to that required of medical students prior to entering on the study of medicine, such requirements to be passed on by the entrance examiner of the state medical board in accordance with Section 1270, General Code of Ohio, and (*b*) satisfactory completion at a recognized school of a course of study consisting of:

1. At least two years of thirty-two weeks each, exclusive of holidays and vacations, in two separate calendar years, spent in the study of anatomy, physiology, chemistry, bacteriology, pathology, hygiene and diagnosis such as has been prescribed by the state medical board as the minimum requirement for medical colleges.

2. A third year of study at a recognized school including preventive medicine, symptomatology, diagnosis, pathology and therapeutics as it relates to the appropriate limited branch of medicine or surgery, certificate to practice which is applied for.

3 After having met the requirements of *a* and *b*, and after having satisfied the state medical board concerning the character and moral standing, the candidate must also pass a licensing examination, conducted by the board.

GROUP 3

Those who make application to practice any limited branch of medicine or surgery under Group 3 after Oct. 1, 1915, must submit documentary evidence of:

(*a*) Preliminary education equal to the first two years of a first-grade high school course of Ohio, and (*b*) satisfactory completion of a course of study in the appropriate branch in a school recognized by the state medical board, giving a course of practical and theoretical instruction in, and an approved amount of, anatomy, physiology, chemistry, bacteriology and hygiene, covering an instruction period of not less than four months.

(*c*) After having satisfied the board concerning the character and moral standing, the applicant must also pass a licensing examination conducted by the state medical board.

GROUP 4

Those who make application to practice chiropody after Oct. 1, 1915, must:

(*a*) Show proof of preliminary education equal to the first two years' work of a first-grade high school of Ohio.

(*b*) Submit a diploma from a school or college of chiropody, recognized by the state medical board.

(*c*) Pass a licensing examination conducted by the state medical board, after having satisfied the board concerning the character and moral standing.

GROUP 5

Those who make application to practice optometry after Oct. 1, 1915, must have completed two years of high school, submit a diploma from a school or college of optometry recognized by the state medical board, and must pass a licensing examination conducted by the state medical board, after having satisfied the board concerning the character and moral standing.

The requirements for those who seek to practice in Groups 1 and 2 are higher than in the remaining three. Candidates to practice in these groups must have completed a high school course, must have spent at least two years in a recognized medical school in the study of the fundamental medical sciences, and must have taken a third year in a cult school *recognized by the board*. Those who seek to practice massage movements must have completed at least two years of high school work and have taken a course of at least four months in a recognized massage school, including a small amount of work in anatomy, physiology, chemistry, bacteriology and hygiene. The requirements for chiropody (Group 4) and optometry (Group 5) are practically the same, with the exception that the length of the course is not mentioned and will later be fixed by the board. The reason for this variation in required qualifications lies in the fact that those who seek to practice under the first two groups set themselves up as "healers," ready and anxious to treat all conditions not specifically prohibited by the law. Chiropodists, masseurs and optometrists do not take in such a wide field.

Georgia June Report

Dr. C. T. Nolan, secretary of the Georgia State Board of Medical Examiners, reports the written examination held at Atlanta and Augusta, June 2-4, 1915. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 80. The total number of candidates examined was 172, of whom 162 passed and 10 failed. Fifteen candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College	(1913) 81; (1914) 80.8, 84.2; (1915) 82.4, 83, 86.3, 86.7, 89.6, 91.5.		
Atlanta Medical College	(1914) 82.5, 86.7; (1915) 80.1, 80.7, 81.5, 81.7, 82, 82.8, 82.9, 83.1, 83.1, 83.5, 83.7, 84.2, 84.2, 84.3, 84.4, 85.2, 85.2, 85.3, 85.3, 85.4, 85.4, 85.5, 85.5, 85.5, 85.5, 85.5, 85.8, 85.8, 86, 86, 86.2, 86.4, 86.4, 86.5, 86.6, 86.6, 86.7, 86.8, 86.8, 87, 87.3, 87.5, 87.5, 87.7, 87.7, 87.7, 87.8, 87.8, 87.8, 87.8, 87.9, 88, 88.1, 88.1, 88.2, 88.2, 88.2, 88.2, 88.4, 88.4, 88.4, 88.5, 88.5, 88.6, 88.7, 88.7, 88.9, 89, 89.2, 89.2, 89.2, 89.5, 89.5, 89.6, 89.6, 89.7, 89.8, 89.8, 89.8, 90, 90.1, 90.1, 90.2, 90.6, 90.7, 90.8, 90.9, 90.9, 91, 91.2, 91.2, 91.5, 91.5, 91.6, 91.6, 91.7, 91.9, 91.9, 92, 92, 92.2, 92.8, 93, 93.1, 93.2, 94.7, 95.2.		
Georgia College of Eclectic Med. and Surg		(1914)	89.4
Southern College of Medicine and Surgery		(1913)	88
University of Georgia	81.1, 82.9, 83.1, 84.8, 85.3, 85.7, 87.9, 89.6, 90.2, 90.9,	92,	93.3.
Chicago College of Medicine and Surgery		(1915)	91.6
College of Physicians and Surgeons, Chicago		(1912)	85
Rush Medical College		(1915)	92.2
Johns Hopkins University		(1905)	94
Tufts College Medical School		(1914)	82.4
Leonard Medical College		(1892)	83.5
Jefferson Medical College		(1911)	88.1
University of Pennsylvania		(1914)	96.2
Meharry Medical College	(1912) 84; 80, 80.1, 80.2, 83.2, 83.9, 86.3, 87.3, 87.4, 88.7, 89.7,	(1915) 80, 91.3,	91.3.
University of Tennessee		(1914)	80.7
University of Toronto		(1907)	90.5
	FAILED		
Atlanta Medical College		(1915)	78.3
Bennett Medical College		(1914)	76.4
Knoxville Medical College		(1908)	74.1
Meharry Medical College	(1908) 64.4; (1912) 75.7; (1914) 73.4, 76.1; (1915) 74.1, 74.9, 75.6.		

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Kentucky School of Medicine		(1891)	Kansas
Tulane University of Louisiana		(1913)	Louisiana
Johns Hopkins University		(1913)	Virginia
Central Medical College of St. Joseph		(1903)	Nebraska
Marion-Sims College of Medicine		(1892)	Iowa
North Carolina Medical College		(1902)	N. Carolina
New York Med. Coll. and Flower Hosp		(1913)	New Jersey
Jefferson Medical College		(1912)	W. Virginia
University of Pennsylvania		(1896) (1912)	Penna.
University of Tennessee		(1914)	Arkansas
Baylor University		(1914)	Texas
University of Vermont		(1908)	Vermont
University of Virginia		(1911)	Penna.

North Dakota July Report

Dr. G. M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the practical, oral and written examination held at Grand Forks, July 6-9, 1915. The total number of subjects examined in was 13; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 11, of whom 7 passed and 4 failed. Eleven candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College	(1902) 78.8;	(1915)	82
University of Louisville		(1910)	77
John A. Creighton Medical College		(1912)	73.5
Vanderbilt University		(1915)	73
University of Manitoba		(1915)	83, 83.5
	FAILED		
Chicago College of Medicine and Surgery		(1915)	72
University of Illinois		(1914)	69.1
Starling-Ohio Medical College		(1913)	69.9
Milwaukee Medical College		(1912)	73

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Hahnemann Medical College and Hospital, Chicago		(1909)	S. Dakota
Northwestern University	(1909) Minnesota;	(1911)	Illinois
Rush Medical College	(1912) Minnesota;	(1914)	Illinois
University of Illinois		(1911)	Illinois
Indiana Medical College		(1906)	Indiana
University of Minnesota		(1912)	Minnesota
Barnes Medical College		(1907)	Illinois
John A. Creighton Medical College		(1912)	S. Dakota
University of Pennsylvania		(1877)	Iowa

Book Notices

Peroral Endoscopy and Laryngeal Surgery. By Chevalier Jackson, M.D., Professor of Laryngology, University of Pittsburgh. Cloth. Price, $5. Pp. 705, with 496 illustrations. St. Louis: The Laryngoscope Company, 1915.

The author carefully describes the technic of bronchoscopy and esophagoscopy, and gives good descriptions of the parts visualized. Of special value is his discussion of the subject of anesthesia. He has been a constant advocate for avoidance of anesthetics when possible, even those local in effect, in these operations. In the early part of this kind of work, few surgeons realized that a considerable number of operations could be done with very little discomfort to the patient and with much more safety without the use of any anesthetic, especially in children. In many other cases only a small amount of a local or general anesthetic is desirable. The volume is not limited to bronchoscopy and esophagoscopy, but treats quite fully the various surgical affections of the larynx, air passages and esophagus. The reader will be disappointed in the lack of authentic information regarding the mortality in operative procedures for the removal of foreign bodies from the air passages, and many operators will be surprised at the optimistic views on the results of treatment and surgical measures that appear to pervade the whole book. Although the author has been phenomenally successful in his own work we think it would have been better if the gravity of these procedures had been duly emphasized. On page 319, in a discussion of unsuccessful cases of bronchoscopy for foreign bodies, a slip of the pen is probably responsible for the following statement: "The cases where bronchoscopy has failed have been limited to cases in which the foreign body could not be found, and these have invariably been very small bodies far down and far out at the periphery." The latter part of this sentence overlooks some cases of comparatively large foreign bodies that have entered the bronchus leading to the upper lobe of the lung. The statement on page 320, "In case of small foreign bodies far down and far out at the periphery, after two expert bronchoscopists have failed to find the foreign body, the intruder should be removed by external operation, and the sooner after bronchoscopic failure the better," does not seem to be justified by experience, when we realize that such patients often live for years without operation and with little discomfort, and that the external operation is often unsuccessful and may prove fatal. In such cases, the question whether or not an external operation should be recommended would depend on many conditions that are not here considered. Again the possibilities of careful fluoroscopic bronchoscopy are not considered. The work is elucidated by means of numerous case records, which often prove of the greatest value to an operator. The volume is beautifully illustrated and contains an exceptionally good index.

The House Fly: A Slayer of Men. By F. W. Fitzsimons, F.Z.S., F.R.M.S., Director, Port Elizabeth Museum. Boards. Price, 35 cents. Pp. 89, with illustrations. New York: Longmans, Green & Co., 1915.

The warfare against the house fly seems to be going on in all lands. The most effective as well as the most necessary campaign method is the education of the people as to the nasty habits of the fly and the dangers of associating with him. The human race has for so long regarded him as an inevitable household companion that it is first necessary to convince people that the fly is neither desirable nor necessary as a room mate. This is both effectively and interestingly done by Fitzsimons. His object is to furnish a small book of a popular nature within the financial reach of everybody. In the ninety pages of the little volume are all the essential facts regarding flies, their origin, habits and dangers, and methods for preventing and destroying them, all told interestingly and well illustrated. While not so greatly needed in this country, in which the antifly campaign started and in which it is still several years ahead of any other country, this little book will undoubtedly be of great value in the antifly campaign in England.

Miscellany

Scarcity of Drugs in Austria

The *Wiener klinische Wochenschrift*, September 23, publishes a communication from the Pharmacologic Institute of the University of Vienna which embodies the results of investigation of the supplies of drugs in Austria. It comments on the effect of the war on the drug trade as not only preventing importation of drugs formerly procured from abroad, but also as affecting and reducing the production of medicinal preparations and drugs in the home country. This entails a scarcity of many drugs, and this scarcity can only increase with the duration of the war. It is emphasized, however, that the foregoing applies only to the civilian population. "The military authorities," it continues, "foresaw this lack of drugs and made provision accordingly, so that a scarcity of drugs in the army medical department is scarcely to be feared." By inquiring at hospitals and wholesale drug houses and pharmacies, the present supply on hand has been estimated, and a number of substitutes are proposed for the more important drugs. "Digitalis purpurea has hitherto been imported, mostly from Germany, but the German empire has now prohibited its further exportation, and there is a possibility of a dearth of this drug. In its place can be used the various preparations of digitalis, of which there are large supplies on hand. Or strophanthus can be used as long as the supply holds out." The yellow flowering digitalis grows in Austria, and is said to have the same qualitative action as digitalis purpurea.

To forestall a lack of camphor, physicians are advised to reserve camphor for internal use, and order other substances, such as spirit of mustard, instead of camphor rubs. "Ipecac and senega are drugs of foreign origin, the importation of which has been cut off by the war. In their place are recommended soap-bark (cortex quillajae) and the root of *Saponaria rubra*, in decoction, the dose of the quillaja being a third or a fourth of the senega dose, and of the root of the *Saponaria rubra* the same as the senega dose.

"The conditions in regard to opium may be changed by importation of Turkish opium, but at present the supply is scanty, and rigid economy in prescribing morphin and codein is recommended. Also the use of the synthetic preparation papaverin, in place of morphin, when cramps of nonstriated muscle are the indication for the sedative.

"Senna, aloes and jalap are also of foreign origin. Castor oil came from France and Italy, and the supply is entirely exhausted. In their place the use of phenolphthalein preparations and of purgative mineral waters or their salts is recommended. Frangula grows in Austria, and its extract ranks with cascara. The use of frangula is commended not only for the present, but also later, to promote its home production. Austrian rhubarb contains only about half as much of the essential element as the Chinese, so the dose must be doubled.

"There is a limited supply of atropin and scopolamin on hand, so they must be sparingly prescribed. The production of these alkaloids and also of salicylic acid and its preparations might well be undertaken in Austria, as the mother substances, belladonna, hyoscyamus and datura, as well as phenol are on hand in sufficient amounts and the manufacture does not present insuperable difficulties.

"Apomorphin is to be replaced by other emetics, such as copper sulphate. Physostigmin must be used sparingly. The obstetric and gynecologically important drug, hydrastis, is at present hard to obtain, and the supply of the drug and of its alkaloids threatens to run out completely. As a substitute should be used the cheaper and fully as effectual synthetic, hydrastinin, and the preparations made from it. The antipyretics, pyramidon and its synonymous trade names, amidopyrin, dimopyran, also antipyrin, phenacetin and antifebrin (acetanilid) are none of them of domestic manufacture, and their exportation has been prohibited. The supply of some of them is already exhausted, so that other drugs will have

to be used in their place. The same applies to aspirin and its chemical equivalent, acetylsalicylic acid, which are no longer allowed to be exported.

"Among the drugs used for external application, both sulphur and iodin have been cut off. Economy in the use of each is therefore recommended. Instead of iodin, so far as surface disinfection is concerned, bromin, which is cheaper, should be used, dissolved in chloroform or benzin. A 5 per cent. alcoholic solution of tannic acid is proving useful likewise for this.

"In place of Peruvian balsam; the supply of which is now cut off, we have at our disposal ichthyol and its preparations (thiol, thigenol, etc.) as well as the tar preparations on the market, for surgical use.

"The pure zinc oxid of the Austrian Pharmacopeia (zincum oxydatum albissimum) is not produced in Austria, and its exportation is prohibited. For external use the domestic zincum oxydatum venale can be used instead, if the contaminating lead content does not exceed 0.5 per cent.

"There is no lack of disinfectants; boric acid, which is not to be obtained, can thus easily be dispensed with.

"A word in closing on another matter which affects the prescribing of drugs, that is, the question of proprietaries—*das Spezialitäten-Wesen oder besser gesagt Unwesen*. These manufactured specialties are put up ready for use in specified doses, and they are composed of at least two ingredients. On account of their durability and convenience, there is nothing to be said against the use of simple remedies put up in compressed form (tablets, pastilles, etc.), in exact dosage, and generally with the addition of some indifferent constituent. It cannot be denied that some of these ready-made combinations of drugs are well chosen. But the overwhelming majority of proprietary pharmaceuticals are made up so irrationally that the physician who prescribes them—regardless of all other phases of the matter—reveals the low level of his knowledge. It is time for physicians to break with this mode of prescribing, which has no advantage except that of convenience." The communication is signed by Profs. J. Moeller and H. H. Meyer, both authors of well-known textbooks on materia medica.

Scarcity of Drugs in Sweden

The authorities in Sweden have issued an official circular addressed to all physicians in regard to being economical in prescribing drugs. The circular refers to one issued April 23, 1915, in which all physicians, dentists and veterinarians were enjoined to observe rigid economy in prescribing drugs, and the drugs were enumerated which were the most difficult to procure and with which all concerned would have to be most sparing in their use. The new circular states that this admonition has hitherto been willingly followed and hence the work of the authorities to keep the country's supply of drugs from becoming depleted has been materially aided. In the meanwhile, circumstances have changed, so that the exportation of practically all drugs has been forbidden; but arrangements have recently been made with certain foreign authorities in regard to the importation into Sweden of supplies of drugs calculated to meet the need for half a year. The Swedish authorities appeal to physicians, dentists and veterinarians to use the greatest possible economy in prescribing drugs. The amount of the drug prescribed must be calculated for the patient's indispensable need and no more. Besides this, the drugs that are obtainable in Sweden should be given the preference, and when a drug of foreign origin has to be prescribed the least expensive should be chosen, so that the financial limit set by the exporters should be approached as slowly as possible.

Foreign proprietaries and medicinal preparations with protected names should be used as little as possible, and in their place Swedish preparations should be prescribed or the chemical equivalents, as given in a list enclosed. The circular emphasizes the importance of heeding exclusively the recommendations of this list.

Medicolegal

Fraud in Statements About Medicines

(United States vs. American Laboratories (U. S.), 222 Fed. R. 104)

The United States District Court for the Eastern District of Pennsylvania, in denying motions in arrest of judgment and for a new trial after the defendant had been convicted of violating the Food and Drugs Act and the amendment thereto, says, among other things, that the first three counts of the indictment were under the original act, and charged different acts of misbranding, or false and misleading statements respecting the composition of a medicine put out by the defendant under the trade-name of "Bad-Em Salz." The fourth count was under the Sherley amendment to the original act, and charged the offense of making false and fraudulent statements as to the curative properties of the salts manufactured by the defendant. The case was fully and exhaustively tried and defended, resulting in a verdict of guilty.

The first complaint was an attack on the constitutionality of the Sherley amendment. The position was taken that it is beyond the power of congress to make a crime of the act of a defendant in proclaiming his belief in the curative properties of a medicine. However, the argument on which this was based is so fully met by the opinions accompanying the ruling in U. S. vs. Johnson, 221 U. S. 488, that the court does not feel called on to give it further consideration.

But over and beyond the specific grounds of complaint lay the broader one that there was no evidence in the case to justify the defendant's conviction of a crime. The situation in this view of it might be voiced in the phrase that the defendant, if punished, would be punished for the crime of medical heterodoxy, and not for any offense against the law. In other words, the president of the defendant company, who was himself a physician, advanced a theory, advocated by others as well as by himself, for the treatment of what are commonly known as "gallstone cases." In opposition were eminent physicians and surgeons, and, as the argument might concede, the weight of scientific medical opinion was against him. Inasmuch, however, as the treatment was the subject of controversy, and its efficacy within the domain of opinion, the minority could not be convicted of crime merely because they were outnumbered. It is certainly true that a man should not be convicted of fraud merely because he advocates a theory of medicine which at the time has not received the sanction of the indorsement of the medical profession. It is equally true that a fraud or a faker cannot escape the consequences of his fraud by the mere fact that some one may honestly believe in the theory which he fraudulently and dishonestly exploits. The fact that there was a widely spread disposition among people to give credence to the statement because of a superstitious belief in its efficacy, or indeed such a reputation for the remedy itself as to make people prejudiced in its favor, would not diminish, but would increase the guilt of him who sought to make money by false statements and fraudulent devices.

The motive and policy of the law which lies behind legislation of this general kind is highly promotive of public good. The evils sought to be removed and prevented spring out of conditions requiring tactful, and even delicate treatment. Such laws, if arbitrarily enforced, may easily take the form of an unwise dictatorial interference with the pursuits of others. There is a natural temptation to overdo by trenching on the domain which properly belongs to the ethics of the medical profession. There is danger, also, that the public will come to rely on the protection promised by such laws, and therefore relax individual watchfulness. The temptation even to those who cannot fairly be termed unscrupulous is to yield to the suggestions of greed and come as close to the forbidden line as they safely can. The only sure course in the administration of laws of this kind is to leave the determination of guilt or innocence in a given case to the sound judgment of a jury, supervised by the wisest scrutiny which the trial judge can give to make sure that no one is convicted without guilt.

Right of State as Against Relatives to Discontinue Free Care of Patients

(In re Clark (Mich.), 152 N. W. R. 920)

The Supreme Court of Michigan affirms a judgment requiring Sarah P. Clark, whose son was admitted to the state hospital as a patient in 1901, to pay to the state a certain sum for the cost of maintaining the patient at the hospital after the taking effect of Act No. 101, Public Acts of 1909, entitled "An act to revise the law relative to the care of the feebleminded and epileptic." The court says that no question was raised concerning the power of the legislature to provide for an enforced contribution from relatives for the support of patients committed to the institution as public patients. The only question was whether it was plain that it intended to make the law of 1909 apply to all public patients then in the institution as well as those thereafter received. Admitting that the state may cause these unfortunate persons to be segregated and kept and maintained at a public institution, and may compel relatives to bear, in whole or in part, the cost of maintenance, it seems clear that it may fix the time when such contributions shall begin. It would not lose the right by foregoing its exercise. No vested right in a relative to have the free maintenance of a patient continued would arise because for a period the state had freely maintained the patient. There is in Act No. 101 no language which implies that relatives of patients already admitted as public patients will not be called on to contribute to the expense of maintenance to be thereafter furnished by the state. Consequently, assuming the power to exist to enforce contributions at any time, fair construction would make the act applicable to the relatives of those then within the institution, as well as to the relatives of those thereafter admitted.

Discovery of Cancerous Condition After Judgment for Malpractice in Discontinued Operation

(Mason, Evans and Keys vs. Meloan (Ky.), 177 S. W. R. 435)

The Court of Appeals of Kentucky holds the defendants Mason, Evans and Keys, physicians and surgeons, entitled to a new trial after plaintiff Meloan had recovered a judgment against them for $3,500 damages for alleged malpractice in an operation for the removal of a goiter from the plaintiff's neck. The court says that the evidence for the defendants showed that they were regarded as competent, skilful surgeons in the community in which they lived and operated. It also appeared from their testimony that when they made an incision about half an inch deep for the purpose of removing the goiter and came into contact with a large vein which it was necessary to ligate, it was discovered to be in such a friable condition that it could not be ligated or closed by the usual methods, so that it became necessary to discontinue the operation and stop the flow of blood in the vein by putting pressure on it through packing inserted into the incision. Stated briefly, according to the evidence for the plaintiff, the defendants were not competent to perform the operation when it turned out to be more difficult than they had anticipated, and when the condition of the vein was discovered they became alarmed on account of their inexperience and incompetency, and their carelessness in leaving the packing in the wound too long caused an infection to set up that prevented the place from healing; while the evidence on behalf of the defendants was to the effect that the course they pursued and the treatment they adopted was proper, and the trouble resulted from the fact that the plaintiff left the hospital too soon and the wound did not have the proper treatment. But, after the trial and the rendering of the judgment against the defendants, another surgeon removed the goiter, discovering, in the course of the operation, a malignant, cancerous condition. Then a new trial was sought by the defendants, on the ground that the failure of the wound to heal was due to the cancerous condition of the goiter at the time the operation was attempted by the defendants, and not to any lack of skill or attention on their part. The court thinks that the evidence of the cancerous condition of the goiter was very material evidence in the case for the defendants, and, while it was true that the suit was defended by them on the theory that the wound was progressing nicely after the attempted operation, and would have healed if the plaintiff had remained at the hospital or had given it the proper attention, yet the court does not think this defense should preclude the defendants from obtaining a new trial on the theory that the condition of the goiter at the time they operated, and its failure to heal, was due to the cancerous condition that existed. The defendants did not know this condition existed and did not prosecute the operation far enough to discover it, but that it was present when the operation was performed was shown with reasonable certainty by the testimony of the surgeon who afterward operated. Probably if the defendants had been more skilful they could have controlled the flow of blood in this vein and have finished the operation, and the evidence for the plaintiff tended to show that the failure of the wound to heal was due to the negligence or lack of skill or want of attention on the part of the defendants. However, this was a matter for the jury on another trial. There was, the court thinks, sufficient evidence to take the case to the jury; but the new evidence made it clear that the defendants were deprived of a defense on which they were entitled to rely, and which they did not discover until after the trial. This new evidence developed facts that might have great weight with the jury in determining the cause that produced the condition of the wound from the time it was made until the date of the trial.

Constitutionality of State Food Law Prohibiting Use of Boric Acid

(Price vs. Illinois (U. S.), 35 Sup. Ct. R. 892)

The Supreme Court of the United States affirms a judgment of the Supreme Court of the State of Illinois which affirmed a conviction of Defendant Price of violating the state pure food law. The violation consisted of a sale in Chicago of a preservative compound known as "Mrs. Price's Canning Compound," alleged to be intended as a "preservative of food," and to be "unwholesome and injurious in that it contained boric acid." The Supreme Court of the United States says that the state has undoubted power to protect the health of its people and to impose restrictions having reasonable relation to that end. The nature and extent of restrictions of this character are matters for the legislative judgment in defining the policy of the state and the safeguards required. In the avowed exercise of this power, the legislature of Illinois has enacted a prohibition—as the statute is construed—against the sale of food preservatives containing boric acid. And unless this prohibition is palpably unreasonable and arbitrary this court is not at liberty to say that it passes beyond the limits of the state's protective authority. But the action of the legislature cannot be considered to be arbitrary. Its judgment appears to have sufficient support to be taken out of that category. Nor can it be said that the legislature exceeded the bounds of reasonable discretion in classification when it enacted the prohibition in question relating to foods and compounds sold as food preservatives. It was contended that the statute as applied violates the commerce clause of the federal constitution, the doctrine with respect to sales in original packages being invoked. The clear inference from the evidence was, however, that the compound was offered for sale at retail in small packages (in envelops) suitable for the consumer, and, nothing appearing as to the character of the shipment into the state, it would be wholly unjustifiable to assume that, in commercial shipments into the state, the small package was segregated or separately introduced. Yet if these small packages were associated in their shipment into the state, as they naturally would be, and were subsequently sold separately or in various lots, these separate packages, although respectively in the original envelops, would not be classed as "original packages" within the rule invoked, so as to escape the local law governing domestic transactions. It does not appear that the state law as here applied is in conflict with any federal rule.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, Chicago, Dec. 27-29.
American Physiological Society, Boston, Dec. 27-30.
Society of American Bacteriologists, Urbana, Ill., Dec. 28-30.
Southern Surgical and Gynecological Association, Cincinnati, Dec. 14-16.
Western Surgical Association, Des Moines, Iowa, Dec. 17-18.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting held Oct. 6, 1915

The President, DR. JAMES C. WILSON, in the Chair

Some Applications of Physical Chemistry to Problems in Medicine

DR. HENRY LEFFMANN: Under the term, "physical chemistry" a vast and intricate science of molecular conditions and transformations has grown up, and has begun to throw light in many directions on the problems presented by both living and nonliving matter. The science is abstruse and the facts can only be treated in an elementary way. I will consider two phenomena, "ionization" and the "colloidal state." The phenomena of ionization are concerned especially with the condition ordinarily called solution, the latter term being here limited to fluids produced by association of substances, one of which is primarily a liquid. The term "solution" has a much wider significance in physical chemistry, common glass being considered a solution. Until a few decades ago, the liquids obtained in dissolving common sugar and common salt in water were designated "solutions." It is now known that the activity of the salt has been materially increased while the sugar has suffered no such change. The sodium atoms of the salt have by the act of solution acquired a positive electrical charge, while the chlorin atoms have acquired a negative charge. The proportion of salt thus modified is dependent largely on the mass of water present. The modification of a substance by which it acquires these electrical charges is termed "ionization"; the respectively positively and negatively charged elements are termed "ions." The importance of the change lies in the fact that the chemical activity of the substance and the pressure of the solution are much enhanced by it. It is found that the most potent ionizing liquid is water. Generally the degree of ionization is increased by dilution. Interesting explanations of well-known phenomena are now possible under these principles. Boric acid is of the same type as nitric acid, yet is far less active. The difference is due to the fact that boric acid is but feebly ionized, while nitric acid is largely ionized. This applies also in the dilution of concentrated acetic and sulphuric acids.

The application of the data of ionization to the interpretation of the action of medicines is complicated by the fact that living protoplasm and membranes have specific selective powers, and thus tests in vitro may mislead. For example, under given conditions, mercuric nitrate ionizes to a much greater extent than mercuric chlorid, yet the latter is ordinarily more toxic. According to Höber, this is due to the fact that the chlorid is more soluble in the lipoid substances contained in the membranes, and thus is enabled to get into contact with the protoplasm of the cells. Another important point is the influence of salts on one another. It is far from being generally true that when a mixture of two or more substances shows no appreciable change of condition, such mixture will have the properties of all the ingredients. An instance is that a mixture of mercuric chlorid and hydrocyanic acid is not equivalent to mercuric cyanid because the substances react in a different manner to the dissolving liquid. Inasmuch, however, as other solvents than water act but feebly in ionizing, it is not unlikely that an alcoholic solution of mercuric chlorid and hydrocyanic acid would have a closer equivalency to mercuric cyanid than a solution in water. The cyanids afford several striking instances of the anomalous effects of mixtures. These data seem to point to the importance of simplification in prescriptions. Another point brought into prominence by the progress of physical chemistry is the influence of extremely fine division. By dividing a material finely we greatly increase the facility of chemical action. We also confer among other qualities constant self-agitation and easier passage through porous partitions. Medicines that are insoluble or soluble with difficulty in the fluids of the body should be administered in as fine powder as possible. Manufacturing chemists do not always apply the highest principles of physical chemistry in their processes, and hence we sometimes find in drug stores preparations of distinctly inferior quality.

The physical chemistry of colloids is now occupying a vast army of workers. The initiative in this field is due largely to an English chemist, Thomas Graham, who, in 1861, published the results of experiments on diffusion through membranes, finding that when a mixture was made of two substances, one of which was crystallizable and the other not, the former would pass rapidly through the membrane, while the other would be held back. He divided substances into two classes, "crystalloids" and "colloids." It is now known that a classification of substances into crystalloid and colloid is not fundamental. These are conditions only, and the same substance may assume both states. The crystalline condition probably results when molecular attractions are allowed more opportunity of acting; the colloidal condition results when less opportunity is afforded. Hence we find that crystals are produced by the solidification of a substance from a liquid or gaseous state. Also, the presence of a minute amount of a crystal of the substance in solution will materially promote the separation in crystalline form, acting as a nucleus for the operation of the molecular forces. Whatever may be the effect of uric acid when in the blood or deposited in the tissues, it is a serious interference when separated in the crystalline form from the urine. Experiments made under the supervision of Dr. Martha Tracy of Philadelphia indicate that a full meat diet increases the acidity of the urine. If this is established, it will be an important point; for the principal danger from uric acid is in its separation in the crystalline form in some part of the genito-urinary tract. Such separation is promoted by increased acidity, and if a minute crystal is deposited at any point it will act as a nucleus, bringing about further separation of uric acid and of other compounds held in unstable solution in the urine. The administration of alkalies for the prevention of this separation may lead to the precipitation of substances not soluble in alkaline urine. It is obvious, therefore, how a full meat diet may cause or aggravate uric acid troubles, although not increasing the output of the acid itself. Knowledge of the nature and properties of colloids enables us to explain many physiologic and pathologic phenomena. Intimately connected with this field of chemistry is the subject of enzymes. These probably form the connecting link of living with nonliving matter. They show colloidal properties and possess high powers of absorption. The problem of the cell is largely a problem of physical chemistry.

DISCUSSION

DR. S. SOLIS COHEN: So far as the physicochemical reactions in the living body are the same as those of the laboratory, we may apply the laboratory findings to the problems of biology—to physiology, to pathology and to therapeutics. But as regards the great and increasing number of the outstanding biologic problems of the day, the value of the unknown factor is so great that we must hesitate. Wolfgang Pauli, in an interesting series of studies of the effects of various ions on the living cell, investigated their comparative precipitating powers on proteins, and deduced the laws that: 1. The effect of a salt on a protein is made up in the main of the algebraic sum of the effects of the individual ions. 2. Anions and cations antagonize each other. Pauli found that sodium sulphocyanid tended to reduce blood pressure and to prevent deposition of calcium

in the arterial walls, so that it could be used with good clinical results in cases of arteriosclerosis. He found also that sulphocyanids were even more active than iodids in favoring the formation of readily soluble protein compounds with the heavy metals, and thus favoring elimination in cases of chronic poisoning. Other considerations enter into this problem, as into that of decalcification, but the whole subject comes under the head of ion-colloid reactions important to pathologist and therapeutist. In connection with the subject of sulphocyanid ions, however, the warning should be given that whereas sulphocyanid may safely be administered in doses up to 1 gm. daily for sedative and analgesic, as well as pressure-lowering effect, yet any compound of the sulphocyanid ion with an ester will produce almost instant death, owing to the solubility of the cell lipoids in esters. In Pauli's experiments it seems strange to read that nitrate and acetate are ions inhibitive of precipitation, when we daily use nitric acid and acetic acid to precipitate albumin out of urine. But in acetic and nitric acids we have, according to the modern view, hydrogen acetate and hydrogen nitrate. Hydrogen is the cation, and if arranged in Pauli's series, should be placed as the strongest of all precipitants when ionized. Thus, too, we find acetic acid a more delicate test for albumin than nitric acid, because the acetate ion has less inhibiting power than the nitrate ion.

DR. ALFRED STENGEL: Physical chemistry is a very new science, to the best informed a difficult and abstruse one, and one which those of us not technically interested in chemistry and physics can hardly hope to master even in its more elementary particulars. Practical physicians, however, should know something about the principles of physical chemistry and the newer principles of physics. Saline solutions are too often employed with the barest knowledge of the principles involved. The use of solutions of greater concentration than the solutions of the body will not bring about the desired results. The introduction of hypertonic solutions into the blood stream, as advised by some French clinicians, while carried out apparently without damage, is a questionable procedure. An argument in favor of physicians knowing something of the newer science is the principle of absorption in the combat against certain bacteria. This is demonstrated in the work of bacteriologists with fullers' earth in the treatment of local infections, in which it has proved of unquestionable value in the matter of diphtheria and typhoid carriers. By the administration of fullers' earth the bacteria have been removed in a way that chemical antiseptics are incapable of doing. Speculation arises in my mind whether or not the use of some of these insoluble substances may not act in the intestinal tract in this way. The work of Ehrlich comes closely on the topic of physical chemistry.

DR. THOMAS MCCRAE: It certainly behooves a clinician to tread warily when discussing the points brought before us tonight. One danger to which many of us are exposed, not only in respect to the application of physical chemistry, but also in other problems is that of picking up terms without learning their meaning. This subject of physical chemistry lends itself to that. It is easy to talk about ions and ionization without having a clear idea of what is meant; of colloids and crystalloids, without having any clear conception of their meaning. Ionization has a tremendous bearing on the bodily activities. Perhaps we are all familiar with the fact that ionization and electrolysis are closely connected. "Electrolysis puts life into the proteins." An interesting work is that done by Rogers in the giving of hypertonic solutions in the treatment of Asiatic cholera, in which his results justify the treatment. With Dr. Stengel I would emphasize the danger of introducing substances under the skin, one example being calcium lactate. The danger of such a method cannot be emphasized too strongly. In practical medicine we have a great deal to learn from physical chemistry. In speaking of colloids and crystalloids we must have some conception of what we are dealing with; must consider how much of the activity of our cells is due to difference in pressure. In clinical medicine we should do our best to make use of this knowledge, because it would lead us in many instances to a much more rational therapeusis.

DR. JOSEPH SAILER: The subject illustrates, first of all, the sympathetic quality of the medical profession in that it must take toll of all the sciences for the understanding of disease and the welfare of the human race. The fundamental element in physics, in chemistry, and possibly the universe, is the atom; and it would seem that until we have a clear idea of the structure of the atom we could not go ahead in the solution of these problems. Until we have a clear conception of some of the problems of physics we are not at liberty to apply our methods with the idea that we are using a tremendous scientific advance in medicine. The application of definite facts of physical chemistry, however, is important, and as in the use of the Roentgen ray and all forms of radioactivity, must be carried out empirically before its value can be determined.

MEDICAL ASSOCIATION OF THE SOUTHWEST

Tenth Annual Meeting, held at Oklahoma City, Oct. 12-13, 1915

The President, DR. J. D. GRIFFITH, Kansas City, Mo., in the Chair

Psychic and Somatic Palsies Complicating Pregnancy

DR. S. GROVER BURNETT, Kansas City, Mo.: A toxic palsy in the pregnant woman endangers her life, her mind and her physical well-being. Primiparas are seldom affected. An early abortion will prevent a complete attack. The pregnant state may slip something in the chemistry of metabolism, causing a toxic neural inflammation syndrome resembling that of Korsakoff's disease but differing in the acuteness of the toxemia, more often causing death by attacking the phrenics and pneumogastrics, and by the alcoholic etiology in Korsakoff's diseases, more chronic in character. The neural inflammation complicating pregnancy may be confined to a single nerve trunk, to one limb, to all the limbs including the trunk, the diaphragm, one or more of the cranial nerves, or the pneumogastric alone, causing death, or to the intercerebral structures, namely, the brain cells and their association nerves, causing only mental symptoms with or without delirium, minus fever. Severe and uncontrolled vomiting usually precedes a general paralysis. The vomiting is milder or absent in the mild or restricted palsies, indicating a severe or mild underlying toxemia, respectively. We must advise against a subsequent pregnancy when a previous hyperemesis gravidarum has occurred; the toxemia is apt to recur in intensified form.

DISCUSSION

DR. G. W. ROBINSON, Kansas City, Mo.: I have had a patient under my care for ten days following pregnancy due to convulsions. If I had no history but examined that patient, I should say she has not Korsakoff's disease, but a multiple neuritis. She has hallucinations, both auditory and visual, with a confusional state. Psychoses resembling dementia praecox are not unusual. I have two such cases under my observation at the present time. All these cases are due to toxemia. There is reduced alkalinity of the blood, if not an acid condition. The best treatment is to decrease the alkalies and stimulate elimination by giving large quantities of fluid, a milk diet, and sodium bicarbonate in doses of 120 grains or more, two or three times a day. By means of this treatment I usually get good results.

DR. G. W. MOODY, San Antonio, Texas: It is difficult to determine the nature of the toxemia. It is not the ordinary toxemia which gives symptoms in other persons quite similar to some of the cases with lactation psychoses and neuroses. It could not be the cause because these patients do not eat much and frequently vomit what they do eat. It is in those cases attended with the vomiting of pregnancy that complications are more likely to occur; nevertheless it is a toxic condition.

The Early Pathologic Changes and Their Relationship to the Clinical Symptoms and Physical Signs in Pulmonary Tuberculosis

DR. FRANCIS M. POTTENGER, Monrovia, Calif.: Pulmonary tuberculosis, as it affects the apex of the lung, is a metastatic infection coming from a focus which may be far distant in other parts of the body. This primary focus is commonly found in the peribronchial glands, but may be in other glands, such as the cervical and mesenteric. Often the pulmonary lesion is a renewed activity in an old focus. Under these circumstances we have different conditions present. First, as a result of the old chronic process, there is a degeneration of the muscles, skin and subcutaneous tissue, and, second, increased tone (spasm) in the muscles. If the wasting of the muscles has not been marked, the increased tone may be greater than normal; but if it is marked, the increased tone may not be detectable. Consequently, if we find on inspection and palpation that the muscles are wasted and smaller than usual and that they have an increased tone, and, especially, if we find that not only the muscles but also the subcutaneous tissue has degenerated and is not so marked as on the other side of the chest, then we are led to believe that we are not dealing entirely with a new lesion in the lung but with renewed activity in an old process.

Sometimes we are called on to determine whether an increased tone is due to hypertrophy from overwork or to a motor reflex. This can be determined in the following way: If the increased tone be due to overwork, it is most apt to affect the trapezius, levator anguli scapulae and pectoralis, and sometimes the rhomboidei. If it be due to motor reflex from the lung, the sternocleidomastoideus as well as these other muscles will be involved. In fact, the increased tone will show best, if the lesion be near the apex, in the sternocleidomastoideus, trapezius and levator anguli scapulae. When there is sufficient irritation to affect the apical muscles, the spasm also shows in the diaphragm in the form of a deficient motility. An increased tone of the apical muscles, particularly when the sternocleidomastoideus is involved, plus a lagging of the side, practically always means a motor reflex from the inflammation in the lung.

DISCUSSION

DR. L. G. MOORMAN, Oklahoma City: We must diagnose pulmonary tuberculosis early. Headache is a great aid in making an early diagnosis. We should remember the symptoms that arise from toxins produced by the tuberculous infection, such as malaise, lack of endurance, indigestion, loss of weight, increased pulse rate, night sweats, elevation of temperature, and apparent anemia. There is an apparent anemia in tuberculosis.

DR. F. W. FROEHLING, Kansas City, Mo.: I have seen real cases of apparent anemia in which I was compelled to assume that the patients in question had really too little blood. The quantity was too little, but the constancy of that quantity was all right. A great deal of reflex action is the cause of these apparent anemias.

Caudal Anesthesia (Analgesia) in Genito-Urinary Surgery

DR. BRANSFORD LEWIS and DR. LEO BARTELS, St. Louis: The chief advantages of caudal anesthesia are extreme safety and absence of unpleasant or dangerous after-effects, as nausea, vomiting, pneumonia, etc. It has enabled us to operate with comparative safety on a class of patients in whom the risk of using general anesthesia would have been too great. Caudal analgesia is also very convenient to use in the office for painful cystoscopies, painful vaginal examinations, etc., and patients are able to go to their homes immediately afterward. Prostatectomy is relieved of one of its greatest objections. The patient goes through the operation without shock, without nausea or vomiting, and without menace to heart or lungs, and is as comfortable after its performance as he has been before it.

DISCUSSION

DR. JULIUS FRISCHER, Kansas City, Mo.: In my experience with spinal analgesia, I have noticed that patients would have headaches following it, and I have tried to relieve this pain by placing three or four pillows underneath the patient's head, and bolstering him up in bed in a half sitting posture. The danger from spinal analgesia is respiratory or heart failure.

DR. WILLIAM J. WALLACE, Oklahoma City: My experience with spinal analgesia has been limited to one case in which I did a perineal prostatectomy successfully.

DR. J. D. GRIFFITH, Kansas City, Mo.: Several years ago I used spinal anesthesia, not caudal, in seventy-two patients whose pathologic conditions were below the umbilicus. I have tried to use it in dealing with pathologic conditions above the umbilicus, but have failed. The last patient manifested disturbances of the nervous system which she had not shown before. The operation was done for the removal of pus tubes. I made up my mind I would quit spinal anesthesia.

DR. CLIFFORD C. NESSELRODE, Kansas City, Kan.: A few years ago spinal anesthesia was quite popular in the Kansas City General Hospital. It was resorted to in the case of a woman for the removal of an ingrowing toe-nail. She had complete paralysis of the bowels and rectum following its administration, and so far as could be determined at the time it was likely to be permanent.

DR. LEO BARTELS, St. Louis: As far as the danger of caudal analgesia is concerned, there is no more danger from it than from ordinary infiltration anesthesia. There is no connection between spinal anesthesia and caudal analgesia. We do not enter the spinal canal. If we should accidently enter the spinal canal, we can withdraw the needle and change its direction, and wait three or four minutes before we make the other injection, giving the opening time to close of its own accord. Spinal anesthesia is the most dangerous of all methods of producing anesthesia, including chloroform.

Dietetic Treatment of Pellagra

DR. J. LEWIS DAY, Normal, Okla.: Our most successful form of treatment has been dietetic. We have fed our pellagra patients on a diet rich in animal proteins and low in carbohydrates. This has been done regardless of diarrhea or stomatitis. We do not believe that any patient with diarrhea has been made worse by this diet. When a patient is first admitted, castor oil is administered, and then the diet is instituted. Many patients have given a history of having existed on liquid diet for six or eight weeks with progressive weakness and increasing severity of all symptoms. We place such patients on the above-mentioned diet with almost immediate improvement. Patients sleep in the open air when possible, and they are permitted to lie down a few hours each day. We do not allow them to sit in the bright sunlight, but our experience does not show that the ordinary daylight has any bad effect on the skin lesions. Seasons of the year have seemingly little to do with the progress of the disease, except that during extremely hot weather the response to treatment is slower.

What Are We Doing and What Should We Do for the Feebleminded?

DR. W. L. KENDALL, Enid, Okla.: A careful study into the causes of feeblemindedness has shown that it is very largely hereditary, at least two thirds of the cases being the children of feebleminded parents or grandparents or both. Colonization appears to be the ideal method. Under the compulsory education law, all children now come to public attention when they enter school. Placed in colonies, which are in reality well-regulated communities, where all these people do all the work that they are capable of doing, and live under conditions that are easy for them, the problem becomes simplified by the persons of intelligence who manage the colony, and these children become happy and harmless. A great many of them can be trained to do many things with their hands. They can carry on much of the work of the colony and become partially self-supporting, or even completely self-supporting under direction. The hygiene of the backward child, then, includes the recognition of his condition and the treating of him in accordance with his mental capacity.

(To be continued)

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held in Indianapolis, September 22-24, 1915

(Concluded from p. 1578)

Thoracoplasty for Chronic Empyema

Dr. W. D. Gatch, Indianapolis: The first point to determine in any patient having a chronic empyema, which has been thoroughly drained, is whether the lung is capable of expansion if freed from scar tissue. To discover this I rely on (1) the amount of uncollapsed lung as determined by stereoscopic roentgenograms; (2) the size of the cavity; (3) the presence of curvature of the spine and overlapping of the ribs; (4) the level of the diaphragm. If there is no uncollapsed lung, if the cavity is small, the diaphragm in a high position, the spine curved with its concavity toward the affected side, and if the ribs overlap one another or are close together, then I assume that any effort to bring about expansion of the lung is hopeless. The problem involved in the treatment is the obliteration of an infected cavity which is surrounded by rigid and poorly vascularized walls. The cure is to be accomplished by cutting away the firm walls on at least three sides and applying pliable structures with a good blood supply to the remaining wall. The very chronic cases can mostly be cured, barring the presence of bronchial fistula, providing the operation is thoroughgoing.

Some Surgical Disorders of the Upper End of the Femur

Dr. B. P. Weaver, Fort Wayne: Bone tuberculosis in the adult, involving as it often does the synovia and hip joint, demands radical treatment, which means resection to the point of removing just enough of the ends of the bones to secure apposition of bare bone to bare bone, producing an ankylosis. It is both needless and futile to attempt to remove all the tuberculous tissue, for once the function is arrested cure will follow in the average case under proper hygiene. The hypertrophied form, which may cause bony irregularities which interfere very materially, with motion, offers an ideal condition for the application of Murphy's hip-joint arthroplasty, wherein the lip, if present, could be removed, the acetabulum reamed out, the irregular head properly rounded off with the end-mill, and recurrence prevented by the interposition of fascia-lata flap. Carcinoma of the upper end of the femur is practically always secondary to cancer in some other part of the body, chief among which are the prostate, thyroid and mammary glands, stomach, esophagus and uterus.

Uronephrosis

Dr. H. O. Mertz, Laporte: By uronephrosis I mean retention of urine in the upper urinary tract. Our experience with these cases seems to emphasize the fact that this condition should be recognized early, when constructive surgery may still suffice. Urine analysis is of very little value in these cases, and too much reliance on the pain symptom alone will often lead us astray in diagnosis. Pyelography has a definite field of usefulness early in the condition, but when end pathology is present it is seldom necessary or justifiable. Extreme care must be exercised at operation in interpreting lesions of the upper ureter producing stasis.

DISCUSSION

Dr. H. G. Hamer, Indianapolis: I would like to emphasize the importance of thorough and complete diagnosis in these cases. It is by making use of the cystoscope, ureter catheter, Roentgen-ray and function tests that we can obtain the information for a complete diagnosis. The neutral solution of thorium nitrate and sodium citrate is an excellent solution for pyelography. It is a clear, clean solution which flows readily through the catheter, is said to be nontoxic and nonirritating, the cost is small, and the shadows are much clearer than those obtained by the use of collargol or other solutions.

Dr. P. E. McCown, Indianapolis: It is better to point the way to a diagnosis of uronephrosis before such a condition arises. We should look into the bladder and kidney pelvis earlier in all abdominal conditions.

Diseases of the Gallbladder and Their Influence on Adjacent Organs

Dr. W. H. Williams, Lebanon: The readiness with which a toxic myocarditis or a chronic pancreatitis or the various symptoms of an infective cholangitis yield to prolonged drainage of the gallbladder is extremely gratifying to both patient and physician. The dissolving of gallstones by various remedies for which such claims are made is misleading, for they do not do the work claimed for them and valuable time is lost. All cases of gallbladder disease are not surgical, but they are medical first and continue so as long as we are getting rapid improvement, free from complications and recurrence of attacks; but if the latter is true we should urge surgical interference without delay.

DISCUSSION

Dr. Murray Hadley, Indianapolis: In regard to the source of gallbladder infection, two theories deserve consideration—that the gallbladder becomes infected by the bile which in turn was infected within the liver; or the gallbladder is infected by way of the lymph stream. The point of infection may be at a distance and the bacteria find their way to the lymph stream by the lymph channels within the organ. If the gallbladder is infected by the bile or by an ascending infection, we have a mucous membrane which will permit the organism through it. Perhaps the most interesting part of gallbladder surgery is the number of cases in which on operating we do not find stones.

Dr. Joseph Weinstein, Terre Haute: A gallbladder sufficiently diseased to produce symptoms that can be diagnosed, is a surgical condition. We are only justified in medical treatment after acquainting our patients with the possibilities and probabilities and their refusal to follow our advice.

Dr. Charles Stoltz, South Bend: When you have made a positive diagnosis of gallbladder disease, operate. By surgical treatment of these cases we are not groping in the dark; medically, we are.

Dr. E. H. Griswold, Peru: We are attributing the cause to the disease and not the disease to the cause. The question cannot always be answered by symptoms, for symptoms are conflicting. We get the cart before the horse when we lay the matter of gallstones at the door of an infected gallbladder.

Dr. Vincent A. Lapenta, Indianapolis: Gastric infections follow all lesions. Drain the gallbladder, but inspect the pylorus too—and we will have to operate less often. We are getting too far away from the idea that the stomach itself is the cause of disease.

Some Considerations in Pelvic Floor Work in Women

Dr. W. H. Baker, South Bend: The pelvic floor work of improved methods is not relieving as many of our patients as it should because of the neglect of frequent complications producing like symptoms. The round ligaments retard motion but do not hold the uterus in a forward position. The lower pole of the uterus must be mobilized in prolapsus uteri and retroversion. No operation should be done on the child-bearing woman that would retard the normal motion of that organ. Perineal muscles should be stitched only with their fascia covering included in the stitch, and the sutures should be of absorbable material and protected as far as possible from vaginal discharges by an unbroken vaginal mucous membrane. In all this work a thorough knowledge of the anatomy and physiology is most important.

DISCUSSION

Dr. G. G. Eckhart, Marion: If the levator ani muscle, the perineal and rectal fascia, make the lower floor, and the uterosacral and uteropubic fascia and the uterus and its attachments make the upper floor of the pelvis, then the shortening of the round ligaments along for retrodisplacement will not suffice. If the uterus has been heavy over a long period of time, backward displaced, shortening the round ligaments and rest in bed for the increased weight may give complete relief. No doubt the largest percentage of failures in pelvic floor work are reported in cases where future pregnancy is to be reckoned with.

DR. GOETHE LINK, Indianapolis: Prevention is better than cure. If compensation for obstetrics were better, physicians could spend more time in making deliveries and could more often use professional assistants. There would then be fewer bad tears. A torn perineum can be made almost as good as new at the primary repair, but it is an operation requiring skilful work, good assistance and favorable surroundings. We have too many named operations on the perineum and not enough anatomy. All our efforts should be toward the restoration of normal anatomy and one pathologic condition should be replaced by another.

The Modern Conception of One Form of Nephritis

DR. CHARLES P. EMERSON, Indianapolis: Bright's disease is a term used correctly only when applied to the small, white, contracted, gouty kidney. The majority of cases of progressive nephritis are due to acute infectious diseases, but the disease will stop unless the infections repeat themselves. The pathologic lesion is due not to one infection, but to many; not to one trauma but to many. One of the most important recent advances is the demonstration that the kidney is capable of some regeneration of its specific elements if only the injurious agent producing the lesion stops its activity. In the diagnosis of nephritis the results of the urine examination must be interpreted by the history and physical examination of the patient. I feel that in no small degree the present chaos in our ideas of nephritis is the result of the separation of the laboratory examination of the urine and the physical examination of the patient. Examine the urine of patients more carefully, especially those who are only "neurasthenic"; have more blood cultures made even though the urine be normal, and if the patient's urine contains albumin, casts or both, allow the laryngologist, the dentist and the surgeon to do all they can for your patient before you subject him to the medicinal and dietetic care of chronic nephritis.

Toxemias of Pregnancy

DR. CHARLES E. FERGUSON, Indianapolis: The preventive and curative treatment of nephritis and preeclamptic toxemias are identical. Were women trained to put themselves under the care of a physician in the early weeks of pregnancy, the prompt diagnosis of toxemia would be simplified. So long as expectant mothers get no more care than that given by the midwife, or often not as much as that given to a valuable domestic animal under like circumstances, women will die and doctors will struggle with eclampsia and uremia that should have been anticipated and in most cases prevented. The urine of pregnant women should be examined for sugar and albumin every few weeks during the first six months and every three weeks during the last three months. The blood pressure should be taken from time to time; every patient should be impressed with the significance of dimness of vision, spots before the eyes, and particularly severe pains in the epigastrium. While it is true that eclampsia sometimes develops during labor without warning, the majority of cases reveal neglect of preeclamptic toxemia.

DISCUSSION

DR. H. A. DUEMLING, Fort Wayne: I would like to emphasize two points—one is the importance of careful and thorough examination of the pregnant woman long before her anticipated confinement becomes due; the second is the looking for perineal tears. Physicians are in too much of a hurry, and consequently their patients are brought back to the hospitals, where they are helped, but never brought to the health they could have had the tears been taken care of at the proper time.

DR. A. S. JAEGER, Indianapolis: The best way to prevent eclampsia is to treat it before it occurs, which can be done by the general practitioner. The men who see these cases only when some imperative emergency exists have not a chance to do anything except that which can be done at once.

If a woman is in eclampsia at term, then my custom is to deliver as rapidly as possible. If she has no pulse and a rigid os, I do the cesarean section. If eclampsia comes at seven or eight months, I believe everything should be done to carry these women to term. The use of high forceps is criminal if used on an unengaged head, especially when the cesarean section can be done, saving the mother and child.

Case of Hysteria from the Viewpoint of the Freudian Psychology

DR. MAX A. BAHR, Indianapolis: Hysteria is a psychosis and not a neurosis. The psychology of hysteria is the psychology of subconscious states and their method of growth by a process of dissociation of the normal consciousness. These subconscious impressions still remain dynamic, however, in the life of the individual, and later acquire strength to dominate the entire personality. These so-called "submerged complexes" are capable of being revealed by means of association experiments and analysis of reveries and dreams. New complexes by themselves have influence only in so far as they are indissolubly bound up with emotions of painful content, consequently they become dynamogenic and when sufficient energy has been accumulated to overcome the resistance an explosion takes place and the result is the conversion of these complexes into crises such as we find in hysteria. We have violent outbursts of excitement, transient deliriums, and a multitude of other sensory and motor expressions—in fact there is hardly a symptom in the category of medicine, be it mental or physical, which may not present itself at one time or another in hysteria. The patient's dreams are symbolic of an inherent trend of the inner life of the individual. Psychic phenomena have efficient causes and are as definitely associated with these causes as are physical diseases. The technic of psychanalysis is to establish necessary and definite connection between these symptoms and the exciting causes. The methods employed vary with the individual needs, but the most satisfactory resources at our disposal are association tests and analysis of dreams. The association tests give us a ready method of gaining insight into the various complexes as well as a survey of the patient's general psychologic trend, while through analysis of dreams it is possible to enter the various crypts of the unconscious mind and bring to light many of the repressed and hidden experiences. The principle of analytic psychotherapy is to overcome mental conflict and make the patient realize the existence and influence of these unconscious and self-condemned desires. This psychanalysis cures patients as a result of self-knowledge and ascertaining the cause, although the method of treatment does not alter the neurotic inheritance which nearly all these patients possess. When the principles of this new psychology are more extensively known by the general medical practitioner, hysteria will rapidly decrease in frequency, for it is the general practitioner who is the first to come in touch with these patients.

DISCUSSION

DR. ERNEST H. LINDLEY, Bloomington: The emotions are the most vital diagnostic features. Ideas move the world, but they never move anything until the emotions get behind them and furnish the steam. The balking of emotion, the prevention of emotion finding its normal expression, is not infrequently the source of functional disorder, and where people live in repression they live at war with themselves, and this finds expression in convulsions and all kinds of physical disorders and excesses. The great bulk of nervous cases with which the physician has to deal are cases of balked desires, and the way out is to find normal expression for the emotions of these people. Give them something to do, something worth while for themselves and the community, and you cure them and at the same time give them their rightful place in society.

DR. ALBERT E. STERNE, Indianapolis: Mind cannot exist independent of matter. The mind unquestionably influences the body, and it can influence our emotions. The most recent experiments indicate that the emotions are physical, that they are biochemical and that their results are as manifest and as definite as any organic clinical entity that we can demonstrate in organs outside of the nervous system and the mind which is its expression. To apply psychanalysis wholesale as a method of procedure would be wholly impracticable,

not because of lack of ability on the part of the physician, but on account of lack of time and patience to do it. There is danger in psychanalysis applied irrelevantly, as there is danger in any other thing applied irrelevantly. The whole question may be summed up in the one word—self-control. Teach boys and girls self-control—to recognize that the two fundamental principles which guide all animal creation are alive in us and need control, and we will not have many cases of hysteria. It is the individuals who do not exercise self-control that we meet with in the realm of hysteria.

Dr. C. F. Neu, Indianapolis: Psychanalysis has come to stay, but it is not a "cure-all." We get temporary cures, but psychanalysis has not been in application long enough to say whether we get permanent cures or not. This analysis can only be carried out properly in the proper environment and with the proper attention, and that practically can only be obtained in institutional treatment.

Diagnostic Routine in General Practice

Dr. Charles R. Bird, Greensburg: The diagnosis of disease rests on three things: clinical history, physical signs and pathologic knowledge. In addition to noting the pulse, temperature, reflexes, etc., each patient has a right to expect of us a routine which includes nothing less than case history and case record, stripping to the skin, examination of chest and abdomen, urinalysis, blood pressure and hemoglobin percentage. It is not sufficient that we look for some definite pathologic lesion only when we suspect its presence.

DISCUSSION

Dr. William R. Davidson, Evansville: Too many doctors say they have not time to make examinations, but if we practice systematic routine in all examinations, beginning with the head and in an orderly, systematic manner going through the entire physical findings, particularly taking a full clinical history and writing it down, we will be surprised how much more accurate knowledge is becoming. We must first know the pathology and then know how to interpret that with the clinical history, for when all is said and done the main thing is the clinical history of the patient.

Dr. A. C. Kimberlin, Indianapolis: Get the facts from the patient first, which is the history, and then get what evidence you can from physical examination, before you prejudice yourself mentally, because there is where we make our errors most frequently—in following a line and keeping after it, even at the expense of putting aside something which another person sees in a different light. It is not a matter of what we know, but how we use our knowledge.

Dr. C. S. Bond, Richmond: A man cannot be a diagnostician unless he trains for that work—training his finger tips, his eyes and his ears. I believe the difference between men very largely is the difference in their ability to detect things by hearing, seeing and feeling. Then a man must take time and quietly consider his findings.

Dr. W. A. Fankboner, Marion: We are prone in recent years to lean on the test tube and microscope and blood count and things of that kind. I would not detract from the value of these things, but we must learn primarily to study the patient as a human machine and apply our educated senses to finding out what is the matter with him, using these laboratory methods in a corroborative rather than a primary way. Our success in diagnosis depends on our faculty in interpreting things at their full value.

Benzol in the Treatment of Leukemia

Dr. Joseph M. Barry and Dr. Jane M. Ketcham, Indianapolis: From a study of the literature and from our experience with one case we feel justified in concluding that benzol has a wonderfully selective action in chronic myeloid leukemia, if uncomplicated and not of too long duration; that one can count with considerable assurance on getting a rapid reduction in the number of leukocytes; on getting a normal blood formula; a rapid diminution in the size of the spleen; and an increase in the number of red cells and the hemoglobin percentage, with improvement in the general health of the patient, increase in weight, etc. One should never forget, however, that the drug is a powerful poison and that we must be careful not to carry its effects too far. The patient should be in a hospital, in bed; the gastro-intestinal tract, kidneys and liver should be watched carefully for toxic symptoms; blood counts should be made every few days; the benzol should not be increased in dosage without definite warrant, and its administration should be entirely stopped considerably before the white count has returned to normal.

DISCUSSION

Dr. A. C. Kimberlin, Indianapolis: In the treatment of these cases, the essential point is to be familiar with the temperature curves before beginning active treatment. In the Roentgen-ray treatment we should approach the spleen with care, and feel our way, marking our progress by the temperature, by the pulse and by specially close attention to the mucous membrane of the throat, especially of the tonsils. They have a tendency to take on hydroplastic conditions. Rise of temperature should always be taken into account.

Some Points in the Early Physical Diagnosis of Pulmonary Tuberculosis

Dr. A. C. Kimberlin, Indianapolis: When a case presents the only interest I have is, first, to make a diagnosis; next, if possible, to locate the lesion accurately. Family history is important. Do not take the word of the average patient as to a negative family history of tuberculosis—it is not worth anything. The physical examination is worth just about what one's services are, and that is what you are willing to make it. The first thing one should know in attempting this diagnosis is the anatomy of the chest; next, he should carry a clear picture in his mind of the manner in which pulmonary tuberculosis spreads; then he must know something of the acoustics of a normal chest as well as the pathology of early pulmonary tuberculosis. Percussion and auscultation are our chief and most reliable means of recognizing incipient pulmonary tuberculosis, but auscultation of the voice is of much greater value than ordinarily appreciated, especially if properly practiced and studied. During examination the patient should be at ease, both mentally and physically. He should sit at ease on a chair high enough to bring him on a level with the examiner, or in examining the axillary and subpectoral regions he should lie on a firm table, not a bed or couch with springs under it. We owe an everlasting debt to the roentgenologist for what he can and has done in helping us in our findings, and because he has been our "pace-maker" in teaching the possibilities of a properly made and refined physical diagnosis; but when a physical examiner applies himself, keeping his mind fully concentrated on what he is doing, eliminating all traditional customs of routine physical examination, he is quite able, with the advantage of personal and family history and a thorough clinical history, to arrive at conclusions which are of more practical value to the medical man than would be the findings of the roentgenologist, who only studies a picture showing change in density. A physical examination should be intelligent and conclusive and it should be reliable. One objective sign in diagnosing is worth a dozen subjective symptoms. What a patient tells you may be wrong, but what you find from physical examination, you are responsible for its interpretation and application.

DISCUSSION

Dr. Alfred Henry, Indianapolis: Early diagnosis of pulmonary tuberculosis entails great responsibility on the family physician. You had better say to your patient "You have tuberculosis" if you are in doubt, than to say "You have not tuberculosis." If you err it had better be on the other side. If he has tuberculosis he will do something to cure himself, and if he has not, what has he lost by sleeping out doors or with his windows open for a year? One of the landmarks in this diagnosis is the characteristic tired feeling. If that persists for a few weeks or for a month or two, be suspicious. Take your time; give each patient a half hour to an hour instead of a minute; take the temperature a dozen times, examine the sputum a dozen times, and train your ear to hear.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

November, XXXIX, No. 1, pp. 1-130

1 *Physiology of Stomach. Mechanism of Regurgitation of Duodenal Contents into Stomach. C. J. Hicks, Jr., and J. W. Visher, Chicago.
2 *Origin of Proteolytic Ferments of Blood. Question of Specific Character of Certain Ferments. L. H. Sloan, Chicago.
3 Oxygen and Carbon Dioxid Content of Blood During Hibernation in Woodchuck (Marmota Monax). A. T. Rasmussen.
4 Blood Counts in Frog, Turtle and Twelve Different Species of Mammals. J. J. Wells and J. E. Sutton, Jr., Ithaca, N. Y.
5 *Influence of Oil of Chenopodium on Intestinal Contractility. W. Salant and C. W. Mitchell, Washington, D. C.
6 *Influence of Stimulation of Depressor Nerve on Suprarenal Secretion. A. N. Richards and W. G. Wood, Philadelphia.
7 Respiratory Chamber for Small Animals. A. C. Kolls and A. S. Loevenhart, Madison, Wis.
8 *Mechanism Adapting Oxygen Capacity of Blood to Requirements of Tissues. H. C. Dallwig, A. C. Kolls and A. S. Loevenhart, Madison, Wis.
9 *Stimulation of Hypophysis in Dogs. R. W. Keeton and F. C. Becht, Chicago.
10 Physiology of Stomach. Gastric Hunger Contractions of Normal and Decerebrate Guinea-Pig. J. L. King and H. Connet, Chicago.

1. **Regurgitation of Duodenal Contents into Stomach.**—One hundred and fifty c.c., 0.5 per cent., HCl left in dogs' stomachs for fifteen and thirty minutes caused regurgitation in 38 per cent. of fifty-six trials. In man, an average of 32.6 c.c. gastric juice (acidity 0.411 per cent.) accumulated during twenty minutes' chewing of food, caused regurgitation in 40 per cent. of ten trials. Whereas, 100 c.c. of 0.4 per cent. HCl retained in stomach for twenty minutes caused no regurgitation in 100 per cent. of ten other cases. Duodenal regurgitation following the introduction of 0.5 per cent. HCl into the cat's stomach is effected by means of characteristic movements (mostly "rhythmic pulsations" or "segmentation movements") in the first portion of the duodenum, initiated by the passage of strong HCl into the duodenum, and occurring in the absence of extrinsic nervous connections. Regurgitation never occurred in the absence of these movements. Hicks and Visher claim that antiperistalsis of the duodenum is not concerned in this regurgitation.

2. **Origin of Proteolytic Ferments of Blood.**—There is an increased proteolytic ferment action of the blood serum during pregnancy. Sloan believes that this increased activity is probably in the main due to an increase in the polyvalent ferments. Normal blood serum has a weak nonspecific proteolytic action. The dialysis method of Abderhalden or the method of Williams and Pearce does not suffice to demonstrate a ferment developed during pregnancy acting only on placental protein. Many advanced pathologic conditions give a positive reaction within the time specified for the Abderhalden test of pregnancy. At present the Abderhalden test is a quantitative not a qualitative test.

5. **Influence of Oil of Chenopodium on Intestine.**—According to Salant and Mitchell, oil of chenopodium in dilutions of 1:5,000 and 1:10,000 in Locke's solution produces in the isolated intestine of rabbits a marked decrease of tone which remains permanent and diminishes frequency as well as force of contractions, which disappeared altogether in twenty to twenty-five minutes. Recovery occurred when the intestinal segments were placed in Locke's solution without oil of chenopodium. In carnivorous animals, oil of chenopodium usually, but not always, causes a preliminary rise of tone followed by a steady decline. Rhythmic contractions may increase in frequency, but disappear finally. Recovery may take place when the segments are put into Locke's solution. The reaction to oil of chenopodium was greater in the ileum than in the duodenum or jejunum, but was most marked in the colon. Caffein has no antagonistic effect, but may, on the contrary, aid depression of tone caused by oil of chenopodium. Neither barium chlorid nor pilocarpin has a true antagonistic effect, but may prevent to a small extent depression of tone when added before oil of chenopodium. Pilocarpin has no action on intestine which has been poisoned by oil of chenopodium, but barium produces an increase of tone. Nerve ends as well as muscle fiber are attacked by oil of chenopodium, but the latter is more resistant. Relatively large doses of oil of chenopodium are required to inhibit peristalsis in intact rabbits by intravenous injection. The presence of substances antagonistic to oil of chenopodium is offered as an explanation.

6. **Influence of Depressor Nerve on Suprarenal Secretion.**—Richards and Wood are convinced that the processes in the suprarenal gland which are responsible for the discharge of epinephrin into the blood are subject to reflex inhibition by way of the depressor nerves; in a word, the mechanism of suprarenal secretion is involved, not only in pressor, but in depressor reflexes.

8. **Mechanism Adapting Oxygen Capacity of Blood.**—The work done by the authors indicates that the increase in erythrocytes and hemoglobin noted by practically all workers at high altitudes is due largely if not entirely to the decreased partial pressure of oxygen at high altitude, but the rapid increases in the blood counts noted in man at high altitude and also the increases noted at comparatively slight elevations is not explained by them.

9. **Stimulation of Hypophysis in Dogs.**—Keeton and Becht found that electric stimulation of the hypophysis in dogs under insufflation anesthesia gives rise to an increase in the reducing substances in the blood. Drilling over the sella stimulates the gland mechanically, but not so efficiently as the induced shocks. If the stimulation is applied anteriorly or posteriorly to the gland, with precautions to prevent an escape of the current to the hypophysis, no rise in the reducing substances results. This rise on stimulating the gland does not occur in dogs whose splanchnic nerves have been previously sectioned, a fact which argues against the liberation of a hormone, which increases directly the cellular glycogenolysis. With active diuresis the threshold of glycosuria lies between 0.19 per cent. and 0.21 per cent. reducing power of the blood figured to dextrose. Once established, the sugar in the urine increases in concentration out of proportion to the reducing power of the blood.

American Journal of Public Health, Boston

October, V, No. 10, pp. 965-1102

11 Recent Public Health Work in United States Especially in Relation to Infant Mortality. J. S. Neff, Narberth, Pa.
12 Municipal Control of Diphtheria. W. G. McKay, Jacksonville, Fla.
13 Permanent Sediment Records for Water and Sewage. G. C. Whipple and J. W. M. Bunker, Boston.
14 Statistical Study of Whooping Cough. F. S. Crum.
15 Important Details of Practical Plumbing. H. Y. Carson, New York.
16 Standardization of Public Health Work. W. S. Rankin, Raleigh, N. C.
17 Incubation Time in Culture Diagnosis of Diphtheria. A. Gehrmann, Chicago.
18 Apparatus for Accurately Filling Dilution Blanks. R. Freas, Baltimore.
19 Outbreak of Cowpox. A. J. Douglas, Winnipeg, Canada.
20 Rural Sanitation and Uncinaria Disease. A. G. Fort, Athanta, Ga.
21 Standard Certificate of Birth. W. A. Plecker, Richmond, Va.
22 Action of Certain Bacteria on Nitrogenous Material of Sewage. E. G. Birge, Boston.
22 Preparation of Ammonia-Free Water. E. J. Pugh, Philadelphia.
24 Report of Committee on Industrial Hygiene and Sanitation of Home. J. H. Landis, Cincinnati.
25 Report of Committee on Occupational Mortality. W. F. Snow, Sacramento, Calif.
26 Incorrigible Consumptive — Isolation of Persons Ill with Communicable Diseases. C. Bryant, Haverhill.
27 Some Inconsistencies in Dealing with Tuberculosis. F. G. Curtis, Newton.

Annals of Otology, Rhinology and Laryngology, St. Louis

June, XXIV, No. 2, pp. 393-428

28 Oral Tuberculosis. T. E. Carmody, Denver.
29 Sinister Unrecorded Anomalies of Sphenoid. A. W. Meyer, Palo Alto, Calif.
30 Pollen Therapy in Hay-Fever. J. L. Goodale, Boston.
31 Experiments with Autoserum in Treatment of Hay-Fever. Relation of Anaphylaxis and Eosinophilia to Hay-Fever. H. Hays New York.
32 Accidental Pneumothorax During Tracheotomy; Report of Case. S. Iglauer, Cincinnati.

33 Simple Manometric Apparatus for Measuring Eustachian Tubal Patency and Tympanic Ossicular Mobility. L. M. Hubby, New York.
34 Accidental Injuries of Sigmoid Sinus Inflicted in Simple Mastoidectomy. W. A. Scraton, New York.
35 Ethmoidal Exenteration. C. M. Robertson, Chicago.
36 Use of Pituitary Extract as Coagulant in Surgery of Nose and Throat. H. Kahn and L. E. Gordon, Chicago.
37 Tuberculosis of Larynx. J. Holinger, Chicago.
38 Choanal Fibroma. N. H. Pierce, Chicago.
39 Hammond's Mastoid Skin Grafting. F. Allport and A. S. Rochester, Chicago.

Boston Medical and Surgical Journal

November 4, CLXXIII, No. 19, pp. 685-722

40 Medicine; Profession or Trade. H. Cabot, Boston.
41 *Late Results of Operations on Hip Joints for Hypertrophic Arthritis. E. G. Brackett and H. W. Marshall, Boston.
42 Therapeutic Value of Injections of Whole Blood. J. S. Davis, Dallas, Tex.
43 Massage and Remedial Exercises in Treatment of Children's Paralyses; Their Differentiation in Use. J. M. Colby, Boston.
44 Treatment of Acute Infections of Airways by Instillation of Aromatic Drugs. I. W. Voorhees, New York.
45 Studies in Speech Disorder. W. B. Swift, Boston.
46 Case of Thrombophlebitis of Veins of Cord Associated with Colon Bacillus Infection of Epididymis. E. G. Crabtree, Boston.

41. Operations on Hip Joints for Hypertrophic Arthritis.—The nine cases reported by Brackett and Marshall represent four arthrodeses, one decapitation of the femoral head, three cheilotomies and one arthrotomy for a loose body. Results of the four arthrodeses are as follows: Three patients were actively at work at the time the last observation was made on them and the fourth person was improved in health. The result of the decapitation of the femoral head represented some improvement. The three cases in which diffuse exostoses and bony lips were removed from hip joints (cheilotomies) varied considerably in their success. One, a teamster, was at work two years and ten months after operation, having begun again seven or eight months after leaving the hospital. The other two patients had both hips operated on, and neither had resumed his former occupation. One of the two could chore around home and did not need a cane except in the street. The third cheilotomy patient was operated on twice and walked with a crutch and a cane seven years after his first operation. At the last observation he was in fairly good general health with much less hip pain. The first joint treated was still quite serviceable, while the second one was neglected by him in its after care, so that it was badly rotated outward at the last examination. This case, the oldest of the series, originally had marked changes in both hips and had been disabled for two years. His efficiency was increased by surgery, but not to the point of work, and the main benefit has been relief from pain. The one case of arthrotomy for removal of a loose body in the joint probably had a traumatic origin, and at operation the joint did not show many other pathologic changes. Complete relief followed removal of this body, and the patient could walk easily and painlessly when seen after two years and one month.

Canadian Medical Association Journal, Toronto

October, V, No. 10, pp. 853-948

47 Disabilities, Including Injuries Caused by Bullets, Shrapnel, High Explosives, etc. A. Primrose, Edinburgh.
48 Nonmaterialism in Medicine. D. F. Harris, Halifax.
49 Case of Large Celled Splenomegaly (Gaucher Type). H. A. Bruce and O. R. Mabee, Toronto.
50 Subcutaneous Administration of Fluid in Acute and Subacute Conditions in Infancy. R. P. Smith, Toronto.
51 Method of Dealing with Tuberculosis in Public Schools of Toronto. F. S. Minns, Toronto.
52 Cholemic Hemorrhage. E. M. Von Eberts, Montreal.
53 Typhoid Cholelithiasis and Cholecystitis. E. M. Von Eberts, Montreal.

Florida Medical Association Journal, Jacksonville

October, II, No. 4, pp. 97-128

54 Reflections on Modern Methods of Treatment by Serums and Vaccines. W. S. Thayer, Baltimore.
55 Composite Board of Medical Examiners. R. H. McGinnis, Jacksonville.
56 Plea for Better Health Organizations in Smaller Municipalities of Florida. M. E. Heck, St. Augustine.
57 Some Thoughts on School Inspection. D. C. Main, Welaka.

Journal of Experimental Medicine, Lancastar, Pa.

November, XXII, No. 5, pp. 517-673

58 *Chemopathologic Studies with Compounds of Arsenic. Types of Arsenic Kidney. L. Pearce and W. H. Brown, New York.
59 *Id. Histologic Changes in Arsenic Kidneys. L. Pearce and W. H. Brown, New York.
60 *Id. Pathologic Action of Arsenicals on Suprarenals. W. H. Brown and L. Pearce, New York.
61 Immediate Effects of Reduction of Kidney Substance. H. T. Karsner, H. A. Bunker, Jr., and G. P. Grabfield, Boston.
62 *Bactericidal Action of Ethylhydrocuprein on Pneumococci. H. F. Moore, New York.
63 *Serum Ferments and Antiferment During Pneumonia. J. W. Jobling, W. Petersen and A. A. Eggstein, Nashville, Tenn.
64 *Serum Changes Following Kaolin Injections. J. W. Jobling, W. Petersen and A. A. Eggstein, Nashville, Tenn.
65 *Effect of Protein Split Products on Serum Ferments and Antiferment. J. W. Jobling, W. Petersen and A. A. Eggstein, Nashville, Tenn.
66 *Effect of Killed Bacteria on Serum Ferments and Antiferment. J. W. Jobling, W. Petersen and A. A. Eggstein, Nashville, Tenn.
67 Cultivation of Tubercle Bacillus Directly from Sputum by Method of Petroff. R. A. Keilty, Philadelphia.
68 *Experimental Arthritis in Rabbit. Contribution to Pathogeny of Arthritis in Rheumatic Fever. H. K. Faber, New York.
69 Action of Lethal Dose of Strophanthin in Normal Animals and in Animals Infected with Pneumonia. R. A. Jamieson, New York.
70 Origin of Tumors in Mice. Tumor Incidence and Tumor Age in Various Strains of Mice. A. E. C. Lathrop and L. Loeb, St. Louis.

58. Types of Arsenic Kidney.—Pearce and Brown found that injection of arsenious acid into dogs produces a uniformly red kidney. The type of kidney produced by injections of salvarsan, neosalvarsan and galyl falls into the general class of red kidneys, although certain differences relate them to the other main type, the pale kidney. These differences consist in a relatively greater degree of tubular necrosis and in the character of the vascular injury. Injection of arsacetin into dogs produces an exceedingly pale kidney. The organ is enlarged, soft and friable. Arsenophenylglycin and atoxyl produce pale types of kidneys, but the amount and extent of vascular injury are somewhat greater than in the arsacetin kidney. The cortical necrosis of the arsenophenylglycin kidney is extreme and is quite comparable to that produced by arsacetin.

59. Changes in Arsenic Kidneys.—Here Pearce and Brown show that while some arsenicals produce changes in which vascular injury predominates, others produce an equally dominant tubular injury. In either of these groups the character and degree of the vascular or tubular injury produced by different compounds shows further variation, such that the lesions of different arsenicals of the same group are not identical. Each compound of arsenic tested produced a lesion complex in the kidney that is relatively characteristic for that compound. The mode and character of the action of arsenicals are dependent on the chemical constitution of the compound.

60. Action of Arsenicals on Suprarenals.—Toxic doses of all arsenicals produce definite pathologic changes in the suprarenals of guinea-pigs. These changes include congestion, hemorrhage, disturbances in the lipoid content, cellular degenerations and necroses, and reduction in the chromaffin content. The character and severity of the injury produced by different arsenicals varies with the chemical constitution of the compounds. From these facts, Brown and Pearce believe that suprarenal injury is an important factor in arsenical intoxication, and suggest that therapeutic doses of some arsenicals may produce suprarenal stimulation.

62. Bactericidal Action of Ethylhydrocuprein on Pneumococci.—Moore claims that the serum of rabbits which have been previously treated with a single dose of ethylhydrocuprein exerts a bactericidal action on, and, later, inhibits the growths of pneumococci in the test tube. These actions are most evident in the serum of rabbits when the base (optochin base) is given in oil subcutaneously; somewhat less when the hydrochlorid of the drug is given in water subcutaneously; slight when the base is given in oil intramuscularly; and least evident, or absent, when the hydrochlorid in water is introduced directly into the stomach. To get these effects by the intravenous route, toxic doses must be given, and, even with toxic nonfatal doses, the effects do not last

long. In the case of the base given in oil subcutaneously to rabbits in a dosage of 0.1 gm. per kilogram of body weight, the bactericidal action of the serum is at its maximum about one hour after administration, and it passes into an inhibitory effect about four hours after the drug has been given. In man the same inhibitory and bactericidal actions of the serum are present when a single dose of 0.5 gm. of the hydrochlorid of the drug is given by the mouth or subcutaneously, but the bactericidal action is not so marked as in rabbits. When the optochin concentration in the serum has, apparently, diminished to a certain point in relation to the number of pneumococci present, the pneumococci which have survived the bactericidal action for a few hours acquire the power of growing freely.

63. **Serum Ferments and Antiferment During Pneumonia.**—The authors state that the crisis in pneumonia is usually accompanied by (*a*) decrease in the serum antiferment; (*b*) the mobilization of a nonspecific protease in the serum; (*c*) an increase in serum lipase; (*d*) a decrease in the noncoagulable nitrogen and of the proteoses in the serum. The crisis is associated with the beginning of an active autolysis, the latter depending on an altered relation between the ferment-antiferment balance. The fibrin and leukocytic débris must be considered as one of the potential sources of toxic substances. With rapid autolysis proceeding, only nontoxic materials are absorbed.

64. **Serum Changes Following Kaolin Injections.**—The intoxication produced by the intravenous injection of inert substances such as kaolin, the authors state, is due to protein split products derived from the serum proteins. The kaolin acts as an adsorbing medium for the serum antiferment, bringing about an alteration in the ferment-antiferment balance. The intoxication is accompanied by an increase in serum protease and proteoses. The serum lipase, the amino-acids and the total noncoagulable nitrogen show relatively little change. The antiferment shows an initial increase, followed by a loss.

65. **Effect of Protein Split Products.**—In dogs the toxic effect of primary proteoses is usually associated with the following serum changes: (a) an increase in serum antiferment, with a following fall in titer; (b) some increase in serum protease; (c) an increase in serum lipase; (d) a decrease in serum proteoses and amino nitrogen. Secondary proteoses produce (a) less marked changes in the antiferment titer; (b) a marked increase in serum protease; (c) an increase in serum proteoses; (d) only a slight change in serum lipase; (e) a primary decrease in amino nitrogen. The peptone the authors used (prepared from dog muscle) caused (a) a change in antiferment titer similar to that produced by the primary proteoses; (b) a marked increase in serum protease; (c) only a slight increase in serum lipase; (d) a primary decrease in proteoses, followed by an increase later; (e) an increase in amino-acids. A small dose of peptone resulted in a decrease in antiferment titer, together with a primary decrease in serum protease. The peptone preparation was nontoxic when introduced into the stomach or rectum, while the intestinal injection was followed by an immediate intoxication.

66. **Effect of Killed Bacteria on Serum Ferments.**—The intravenous injection of killed organisms is followed by the mobilization of a nonspecific protease and lipase; the rapidity and extent of this reaction depend on the toxicity of the organism and on the resistance of the organism to proteolysis. The temperature and leukocytic curve bear no relation to the ferment changes. The serum antiferment is usually increased after the injection. Of the organisms studied, the typhoid bacillus produced the most marked ferment changes and the tubercle bacillus the least. The toxicity of the dried organisms cannot depend wholly on proteolysis in vivo, but must depend in part on the preformed toxic substances liberated on lysis. Serum protease should not be considered as the sole exciter of intoxication through the production of protein split products; it seem possible that its function may in part be one of detoxication.

68. **Experimental Arthritis in Rabbit.**—By a process of sensitization described, Faber was able to cause arthritis in rabbits constantly after one intravenous injection of the streptococcus. This reaction is specific. By intravenous inoculation, without previous sensitization of the streptococcus used, it was possible to cause arthritis in rabbits only after three or more injections. An analogy is suggested between the arthritis induced by sensitization and the relapses in human rheumatic fever. A further analogy is suggested between the development in rabbits of arthritis after repeated intravenous injections and the development of the primary lesion in human rheumatic fever.

Journal-Lancet, Minneapolis

October 15, XXXV, No. 20, pp. 555-585

71 Contributions of Twentieth Century Toward Better Understanding of Gastro-Intestinal Ailments. F. Smithies, Chicago.
72 Exophthalmic Goiter; Report of Case. F. M. Crain, Redfield, S. D.
73 Nasal Accessory Sinuses as Foci of Infection. W. R. Murray, Minneapolis.
74 Cerebrospinal Meningitis. A. Kuhlmann, Melrose.

November 1, No. 21, pp. 587-617

75 Team Work. J. T. Rogers, St. Paul.
76 Inventory of Progress of Medical Education in America and in Minnesota. R. O. Beard, Minneapolis.

Lancet-Clinic, Cincinnati

October 30, CXIV, No. 18, pp. 387-406

77 Epinephrin Reaction in Gastric Crisis of Tabes and Significance of Betaiminazolyl-Ethylamin in Feces. B. Holmes, Chicago.
78 Non-Drug Therapy. R. Southworth, Cincinnati.
79 Diagnosis and Treatment of Gastric and Duodenal Ulcers. J. R. Wathen, Louisville, Ky.
80 Intestinal Prolapse and Adhesions. H. W. Bettmann, Cincinnati.

Laryngoscope, St. Louis

October, XXV, No. 10, pp. 675-738

81 Report of Collective Investigation on Curettement of Eustachian Tube in Chronic Aural Suppuration. S. Yankauer, New York.
82 Surgical Anatomy of So-Called Capsule of Faucial Tonsil. G. H. Makuen, Philadelphia.
83 Some Facts Not Generally Understood About Oil Ether Colonic Anesthesia. J. T. Gwathmey, New York.
84 Brain Infection of Otic Origin; Report of Five Cases. J. W. Murphy, Cincinnati.
85 Spindle-Cell Sarcoma of Nasopharynx. H. B. Orton, Newark, N. J.

Medical Record, New York

November 6, LXXXVIII, No. 19, pp. 769-814

86 Value of Scientific Doubt in Surgical Diagnosis. J. B. Roberts, Philadelphia.
87 Bone Grafting and Arthroplasty. G. H. Sexsmith, Bayonne, N. J.
88 Neglect of Injuries to Nose from Football. D. B. Delavan, New York.
89 Electromechanical Treatment of Genito-Urinary Diseases. W. B. Snow, New York.
90 Prevention of Insanity. W. M. Kenna, Central Valley.
91 Quinin after Rectal Operations. E. Bonnot, St. Louis.
92 Picric Acid and Benzidin Stain; Transitional Cell in General Paralysis. B. Lemchen, Dunning, Ill.

New Mexico Medical Journal, Las Cruces

October, XV, No. 1, pp. 1-39

93 Protest Against Ill-Advised Surgery. H. M. Smith, East Las Vegas.
94 Enzymes. E. S. Bullock, Silver City.
95 Nephritis of Infection. M. K. Wylder, Albuquerque.

New Orleans Medical and Surgical Journal

November, LXVIII, No. 5, pp. 287-358

96 Bacteriology and Pathology of Blastomycotic Infections. H. W. Wade, New Orleans.
97 Medical Aspects of Systemic Blastomycosis. G. S. Bel, New Orleans.
98 Cutaneous Blastomycosis. H. E. Menage, New Orleans.
99 Surgical Aspects of Systemic Blastomycosis. R. Matas, New Orleans.
100 Malaria and Carriers of Malarial Infection. J. C. Cole, New Orleans.
101 Cervical Myoma: Report of Unusual Case. M. A. Shlenker, New Orleans.
102 *Malignant Disease of Left Testis. R. Matas, New Orleans.

102. **Malignant Disease of Left Testis.**—The essential facts of Matas' case were the following: First, that a mixed tumor

of the testis developed rapidly and attained unmistakable characteristics in the course of nine months, dating from its first appearance. Castration, including the spermatic cord beyond the internal ring, was performed Dec. 19, 1914, nine months after the first appearance of the disease. July 15, or twenty-seven days after this thorough castration, Chevassu's operation for the removal of the primary lymph zone for preaortic and perirenal metastases was performed. This operation demonstrated that extensive glandular metastases had already occurred. All the visible glands were removed; the pathologist reporting an identical histologic structure, namely, mixed tumor, in the metastases, as he had found in the testis. The patient recovered from this extensive and serious operation. May 1, or scarcely four months after this operation, it became quite evident and demonstrable that many large metastatic deposits had occurred in the posterior mediastinum, pleura and lung. May 30 the patient died, in consequence of the thoracic metastases. Thus death occurred about thirteen months after the first signs of the disease had appeared in the testis, six months after castration; and five months after the attempt at radical extirpation or Chevassu's operation.

New York Medical Journal

November 6, CII, No. 19, pp. 929-976

103 Value of Roentgen Ray in Diagnosis of Gastro-Intestinal Disturbances. J. Friedenwald and F. H. Baetzer, Baltimore.
104 Chronic Intestinal Stasis. A. Bassler, New York.
105 *Sesamoids of Flexor Brevis Hallucis; Their Importance. N. P. Barnes, Washington, D. C.
106 Fibroid of Ligamentum Ovarii Proprium. A. M. Hellman, New York.
107 Clinical Delimitation of Hysteria. M. Solomon, Chicago.
108 Diarrhea in Infancy. C. K. Johnson, Burlington, Vt.
109 Immunization with Autogenous Proteins in Bronchial Asthma. H. Iskowitz, New York.
110 Vincent's Angina. A. G. De Sanctis, New York.

105. **Sesamoids of Foot.**—The sesamoids of the metatarsophalangeal articulation, Barnes says, demand attention. Their constancy and prominence is shown by all the plates taken at random of males and females from 15 to 75 years of age. Situated one in either head of the flexor brevis hallucis. They are bound together by a strong fibrinous structure and capsular ligament, forming a groove on the under surface for the passage of the tendon of the flexor longus hallucis. The sesamoid bones must be present and the great metatarsophalangeal joint must be normal for its proper functioning. Injuries to these bones are the result of direct violence, and the extent of injury is proportionate to the force of the violence or the length of time of its continuance. Thus, a heavy weight falling on the foot, the body weight being caught with great force on the ball of the foot, as in falling from a height or slipping while carrying a weight, or the twisting or slipping of the foot off the prong of an automobile clutch or brake, may fracture one or both of these bones completely. The inner bone situated directly under the head of the metatarsal is the more commonly injured.

The result of a serious trauma of this sort asserts itself with corresponding pain and tenderness, increasing with use. Disability, from resulting inflammation and sympathetically lame muscles, becomes complete. More frequently in these days of constant dancing, hard floors and pavements, high heels and thin shoe soles, the trauma comes on gradually. Short rests and cold applications at the onset give relief, but on resuming the excessive glide under the hypnotic sway of the rhythmical rag and the spirit of "on with the dance, let joy be unconfined," the heat and discomfort, pain and tenderness return. Continuance of this indulgence produces a cellulitis, tendosynovitis, periostitis, tissue thickening and sometimes exostosis and the corresponding lame muscles from unnatural walking. Trauma of the tissues thus produced naturally enforces some form of rest treatment. To this rest treatment the attendant may add counterirritants, heat and pads.

The plan Barnes has devised to protect these injured bones is effective. The shoes the individual has been wearing, the more worn and thin the better, are simply half soled with a good, thick leather, cutting out the inner surface completely corresponding to the position of the sesamoids. New shoes have the outer sole removed, corresponding to the position of the bones in question. A hole an inch or a little more in diameter is cut out sharply and completely in the inner sole. If the thickness of the sole is not enough to keep the sesamoids from touching the floor, an extra sole is applied cut out in the same way. No inner pads are used, but the projection is permitted to make its own depression on the soft inner sole, which acts as a hammock or drum head. In fracture or trauma followed by exostosis open surgery is needed. The former may be treated in the same manner as fracture of the patella, or the exostosis may be removed without disturbing the joint.

New York State Journal of Medicine

October, XV, No. 10, pp. 373-414

111 Spinal Fluid in Syphilis. S. R. Miller, Baltimore.
112 *Organic Obstruction of Ileum as Cause of Gastric Disturbance. G. Chambers, Toronto, Canada.
113 *Intestinal Prolapse and Adhesions. H. W. Bettmann, Cincinnati.
114 Intestinal Stasis. A. A. Jones, Buffalo.
115 Fractures in Vicinity of Joints. C. E. Caldwell, Cincinnati.
116 Available Fields for Research and Prevention in Mental Deficiency. M. G. Schlapp, New York.
117 Improvements in Technic of Cesarean Section. W. M. Brown, Rochester.
118 Case of Spontaneous Rupture of Uterus. R. McPherson, New York.
119 Case of Hydrocephalus. A. W. Armstrong, Canandaigua.

112 and 113. Abstracted in THE JOURNAL, May 22, 1915, p. 1787.

Philippine Journal of Science, Manila

July, X, No. 4, pp. 249-306

120 Pathologic Anatomy of Bubonic Plague. B. C. Crowell, Manila.

Surgery, Gynecology and Obstetrics, Chicago

November, XXI, No. 5, pp. 541-668

121 *Premature Separation of Normally Implanted Placenta. J. W. Williams, Baltimore.
122 What Has American Gynecologic Society Done for Gynecology? T. J. Watkins, Chicago.
123 *What Is Fate of Ovaries Left in Situ After Hysterectomy? H. N. Vineberg, New York.
124 *Ovarian Transplantation. F. H. Martin, Chicago.
125 *Subcutaneous Transplantation of Ovarian Tissue. S. A. Chalfant, Pittsburgh.
126 *Study of Management of Placental Stage of Labor. J. O. Polak, Brooklyn.
127 *Hair Balls, or Hair Casts, of Stomach and Gastro-Intestinal Tract. R. Matas, New Orleans.
128 Cysts of Prostate. J. H. Cunningham, Jr., Boston.
129 *Surgical Treatment of Tubercular Ureter in Female. D. Bissell, New York.
130 *Partial Occlusion in Treatment of Aneurysms. E. Martin, Philadelphia.
131 *Perinephritic Abscesses. W. F. Braasch, Rochester, Minn.
132 Obstetrics, Lost Art. R. W. Holmes, Chicago.
133 Chancre of Cervix Uteri. U. J. Wile and F. E. Senear, Ann Arbor, Mich.
134 Physiologically Active Substances Contained in Placenta and in Corpus Luteum. R. T. Frank, New York, and J. Rosenbloom, Pittsburgh.
135 Operative Treatment of Bad Results After Fracture. J. E. Moore, Minneapolis.
136 Construction of Artificial Vagina with Establishment of Menstrual Function. W. D. Ward, Rochester, N. Y.
137 Management of Deficient Lactation. N. S. Heaney, Chicago.
138 Small Doses of Pituitary Extract in Obstetrics. J. L. Bubis, Cleveland.
139 New Tonsil-Holding Forceps. S. C. Glidden, Danville.

121. **Premature Separation of Placenta.**—One of Williams' two patients, on whose cases this article is based, presented albuminuria and probably nephritis, while in the other the urine was normal both before and after the accident; yet both presented identical uterine lesions with striking arterial changes. Williams believes that they were both due to some common cause, which he assumes to be "toxemia" in character, but distinct from the usual toxemia of pregnancy, and concerning the nature and origin of which he is ignorant. The conclusions drawn from his study by Williams are: 1. That premature separation of the normally implanted placenta occurs much more frequently than is generally believed and may give rise to only trifling clinical symptoms or may put the life of the patient in the greatest jeopardy. 2. That in the severe cases, at least, the accident is associated

with profound disorganization of the uterine muscle by hemorrhage, the so-called uteroplacental apoplexy. 3. That its causation is probably dependent on some as yet undifferentiated form of toxemia, which may or may not be accompanied by albuminuria.

The author urges that the possibility of the accident should always be considered when dealing with antepartum hemorrhage, and that a tentative diagnosis should be made unless the existence of placenta praevia can positively be demonstrated. Furthermore, a diagnosis of concealed hemorrhage should be made whenever a patient in the later months of pregnancy complains of intense abdominal pain, is pallid, and presents a uterus of ligneous consistency, in the absence of external bleeding and even of the clinical symptoms of shock. The second important deduction is that hard and fast rules cannot be laid down for the treatment of premature separation of the placenta; but at the same time it should be regarded as axiomatic that even in slight degrees of separation the bleeding will continue until the uterus has been emptied of its contents and is able to contract down on and constrict the bleeding vessels. In general, the decision to interfere will depend on the amount of blood lost and the general condition of the patient. If the hemorrhage is slight, and is not associated with untoward symptoms, the case will usually terminate successfully by the unaided efforts of Nature; although it is understood that the patient should be watched carefully and interference resorted to on the first appearance of serious symptoms.

On the other hand, if the bleeding is profuse and the condition of the patient serious, prompt intervention is necessary, when the choice of operation will depend on the condition of the cervix—forceps, version, the introduction of Champetier de Ribes' balloon, or cesarean section being employed, according to the exigencies of the case. The latter operation should be chosen only when the cervix is but slightly dilated, or when the general condition of the patient is more serious than can be accounted for by the amount of blood which has escaped. All danger has not passed with the delivery of the child through the maternal passages, whether spontaneously or artificially; as the uterus frequently fails to contract satisfactorily, and death from atonic hemorrhage may result, unless radical measures are taken for its relief. Accordingly, when such an accident supervenes, time should not be wasted in employing hot intra-uterine douches, ergot, or pituitary extract and similar measures, but the uterus should be immediately packed with gauze. If this leads to forcible contractions and completely checks the bleeding, well and good; but if blood-tinged serum makes its way through the pack the abdomen should be opened immediately and the uterus removed in toto, or amputated supravaginally.

123 and 124. Abstracted in THE JOURNAL, June 12, p. 2014.

125. **Transplantation of Ovarian Tissue.**—Ovarian tissue was transplanted by Chalfant in thirty-two patients the first one Dec. 30, 1912, and the last one Jan. 27, 1915. In every instance it seemed necessary to remove the ovaries on account of infection, extensive cystic degeneration, damage from extensive adhesions, or impaired blood supply. In practically every instance, the tissue transplanted was abnormal. One patient died at the end of twenty-six hours from a peritonitis due to the bacillus aerogenes capsulatus. In spite of the fact that many of the sections were taken from ovaries in intimate contact with pus-tubes, in only one instance was the graft infected. In no case was convalescence influenced by the graft. In a few instances there was a little local tenderness for a time. In 13 patients one ovary was not perfectly normal and there was a possibility that it might require removal, or that the internal secretion from it might not be sufficient, so that it was thought wise to conserve as much ovarian tissue as possible.

The graft was palpable in 9 of the 13 cases, the oldest one, after one year. In two cases the graft increased in size and was tender and painful a few days preceding menstruation. Only one patient complained of flashes of heat or other nervous disturbances, and it is probable that in this case the ovary was infected and destroyed. Both ovaries were removed, but the uterus remains in two patients. One patient operated on May 22, 1914, menstruated the first time Sept. 1, 1914, and regularly each month including February, 1915. Since that time there has been no menstrual flow. Flashes of heat were moderately severe just after leaving the hospital, disappeared with the onset of menstruation and recurred again in March, at the time of her expected period, but were less severe and lasted about three or four weeks. The other patient has not menstruated. Menopausal symptoms began three months after the operation and have been quite severe. The uterus and both ovaries were taken from 17 patients. Five patients give evidence of continued function of the graft. Of these 17 patients, one died and one had moved and cannot be located. In the remaining 15, the graft was palpable in 12, not palpable in 3. It was tender in 6, but in only one was there much discomfort. This patient has such an unstable nervous system that it is extremely difficult to reach a true estimate of the severity of her discomforts. Distinct variation in the size of the graft was noticed by three patients. Two patients, 10.8 per cent., had no flashes of heat or nervous disturbances; in 7, or 41 per cent., the menopausal symptoms were slight, in 5, or 29.4 per cent., they were moderate; and in 3, or 1.77 per cent., they were severe. Of these 3, one is suspected of having a mild hyperthyroidism. Another has this condition.

126. Abstracted in THE JOURNAL, June 12, p. 2015.

127. Abstracted in THE JOURNAL, January 23, p. 367.

129. **Tuberculous Ureter in Female.**—Bissell advocates the removal of the ureter with the kidney whenever tuberculous changes in the ureter exist the adoption of the combined transperitoneal and retroperitonel routes when the ureter and the kidney are removed at the same time; the use of this same combination of routes when as a secondary procedure the ureter with its accompanying sinus is removed.

130. **Partial Occlusion in Treatment of Aneurysms.**—The treatment indicated in cases of pulsating exophthalmos, due to arteriovenous aneurysm, according to Martin, would be, after preliminary tests as to the effect of compression of the carotid: 1. An occlusion of the vessel by an absorbable ligature up to the point of stopping bruit and pulsation. 2. Ligation of one or more dilated orbital vessels. 3. Starvation diet, guarding against acidosis. Little fluid. Bowel evacuations, accomplished without straining, and two weeks rest in bed made, if not alluring, at least bearable by the judicious use of anodynes.

131. **Perinephritic Abscesses.**—Of 67 patients operated on at the Mayo Clinic, only 2 (3 per cent.) died as the result of operation. Three other patients were reported dead at three, seven and twelve months, respectively, after operation. The subsequent course was ascertained in 51 of the remaining patients. In 18 of this number the wound had healed in less than a month after operation. Of the remaining patients, 16 continued to drain for two months, 6 drained for three months, and 3 drained as long as six months after operation. The fistula persists to the present date in 4 patients, all of whom drained longer than six months. In 2 of these patients an etiologic renal lesion was ascertained at the time of drainage and subsequently nephrectomy was advised. In the other 2 no evidence of renal lesions was discovered on clinical examination; however, the more recent clinical tests were not employed. One of these patients, drained one and one-half years ago, has returned with cystoscopic evidence of an etiologic renal lesion not previously discovered.

Tennessee State Medical Association Journal, Nashville

October, VIII, No. 6, pp. 251-294

140 Heart in Some Acute Infectious Diseases. W. H. Witt, Nashville.
141 Gastro-Enterostomy. J. H. Maury, Memphis.
142 Teratology. S. M. Miller, Knoxville.
143 Treatment of Tubercular Peritonitis. W. A. Bryan, Nashville.
144 Contact Points of Medical Profession and Public. A. D. Dancy, Jackson.
145 Value of Necropsies in Hospital and Medical Practice. H. T. Brooks, Memphis.
146 Local Anesthesia in Rectal Surgery. P. DeWitt, Nashville.
147 Fistula in Ano. D. R. Pickens, Nashville.
148 Eugenics and Marriage. L. A. Stone, Memphis.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

August, XX, No. 3, pp. 77-108

1 Roentgenologic Types of Pulmonary Tuberculosis. H. Walsham and W. Overend.
2 Localization of Projectiles by Roentgen Ray. F. de Courmelles.
3 Minor Points in Roentgenography. N. K. Cherrill.

September, No. 4, pp. 109-142

4 Roentgenotherapy; Its Scientific Basis and Its Teaching. (To be continued.) J. Joly.
5 Use of Intensifying Screens in Roentgenography. L. G. Heilbron.
6 Causation of Williams' Sign in Early Pulmonary Tuberculosis. H. Walsham and W. Overend.

October, No. 5, pp. 143-174

7 Gastroptosis. A. F. Hertz.
8 Roentgen Diagnosis of Fracture of Skull. W. H. Stewart and W. H. Luckett.
9 Roentgenotherapy; Its Scientific Basis and Its Teaching. J. Joly.
10 Two Cases of Electric Burn Successfully Treated by Ionization. A. MacGregor.
11 Location of Foreign Bodies. E. M. Smiles.

British Journal of Tuberculosis, London

October, IX, No. 4, pp. 171-233

12 Open-Air Hospitals. A. E. Shipley.
13 Subcutaneous Tuberculin Injections and Diagnosis of Pulmonary Tuberculosis. E. G. Glover.
14 *Dispensary Treatment Without Tuberculin. A. Sandison.
15 Sanatorium Benefit for Tuberculous Subjects. H. A. Ellis.
16 Nourishment for Tuberculous. W. B. Milestone.
17 Antiformin and Examination of Tuberculous Sputum. W. J. Matthews.

14. Treatment Without Tuberculin.—Sandison claims that tuberculin should not be a necessary part of treatment at a tuberculosis dispensary; it is usually not even desirable, because: 1. Its administration cannot be effectively and safely controlled through a dispensary. 2. Its value is problematical, as no reliable statistics are possible under dispensary conditions, owing to the number of factors involved. 3. It is not the only way by which the attendance of patients can be secured. Dispensary treatment of tuberculosis must be based primarily on an intimate personal knowledge by the physician of the psychologic as well as the pathologic conditions of his patient. The principles of "graduated rest and exercise" can be effectively carried out in considerable detail by dispensary patients, and produce excellent results. The use of inhalants on a respirator is applicable to nearly all cases of pulmonary tuberculosis, and is a valuable adjunct to general treatment.

British Medical Journal, London

October 16, II, No. 2859, pp. 557-592

18 Ureteral Calculus; Its Symptoms and Treatment. (To be continued.) D. Newman.
19 *Removal of Bullet from Right Ventricle of Heart Under Local Anesthesia. L. H. C. Birkbeck, G. N. Lorimer and H. M. W. Gray.
20 *Drainage of Gunshot Wounds. C. M. Page.
21 Recruit's Heart. J. Mackenzie.
22 *Employment of Bandages for Irrigation of Wound Surfaces with Therapeutic Solutions and Draining of Wounds. A. E. Wright.

19. Removal of Bullet from Heart.—The soldier whose case is reported by the authors was admitted to a general hospital, July 19, 1915, having been wounded eight days previously. The bullet had passed through and killed a man in front of him. The patient was knocked down, but did not lose consciousness, and had not had any discomfort other than slight pain from the wound. There was a small dirty wound (one-half inch in diameter) just below and to the right of the xiphisternal junction, and also a painful swelling of the right parotid gland, which disappeared the next day. The patient showed no other symptoms during the first few days. He was kept in bed. The heart appeared to be normal and regular. The pulse varied between 80 and 90. The evening temperature rose to 100 to 101 F. Roentgenoscopy showed that in the lower portion of the heart shadow was a sharply defined dark shadow moving with the heart, and also apparently laterally in relation to the heart. It was seen to lie quite definitely in the substance of the heart. It had a distinct rocking movement. No anteroposterior movement was visible in relation to the heart. The object seemed to be in, or close to, the lowest portion of the wall of the right ventricle. Its shape and size, so far as could be made out, were those of a rifle bullet. Attempts to take roentgenograms were unsuccessful.

As the pulse had shown some irregularity, rate 65 to 95, and the heart had occasionally dropped beats, an operation was decided on. Under local anesthesia a wide horseshoe-shaped incision was made, convexity upward, extending along the sixth costal cartilage on each side and across the sternum at the level of the attachment of the fifth cartilage. The perichondrium was separated from the left sixth cartilage, which was cut across at the costochondral junction and used as a lever to elevate the sternum while the triangularis sterni, pericardium, etc., were being separated off the posterior aspect of the flap. A small portion of the right sixth rib was removed close to the costochondral junction. The sternum, at the lower border of the fifth costal cartilages, was divided with bone forceps. The soft parts were then separated from the sternum and ribs. A hole about an inch long appeared in the pleura on the right side, in the track of the bullet.

The pericardium opened obliquely from the base to near the apex of the heart. About a dram of slightly blood-stained fluid was noticed in the pericardial cavity. The heart looked normal. No wound could be seen. On digital exploration the bullet was felt to be lying, apparently fixed, at the back of the heart, either in the wall or cavity of the right ventricle. The point of the bullet was near the apex of the ventricle. During the manipulations the heart was noticed to miss a beat occasionally—when touched at the upper and back part of the interventricular septum. The right ventricle was seized with a pair of catch forceps near the apex. When it was seen that this caused no disturbance a suture was passed through the muscle adjacent, and by these the heart was held forward. This in no way agitated the patient. On further exploration the bullet was definitely located by probing with a needle, and was thought to be fixed in the right ventricle near the posterior coronary vessels. After manipulation, the bullet was felt to change position and to be free inside the ventricle. It was worked away as far as possible from the coronary vessels and grasped between the thumb and finger. Two stitches were inserted into the muscle wall over the bullet.

The wall of the ventricle was incised for half an inch, and the bullet removed with forceps. While the wall of the ventricle was still being held firmly between the finger and thumb the stitches were tied. On removing the catch forceps there was brisk bleeding, which was stopped quickly by an under-running stitch. The pericardial cavity was wiped free of blood clot and was filled with normal saline to expel the air; it was then sewed up. The right pleural cavity was next filled with saline and the injured pleura sewed up. While the wound was being closed the chest was aspirated to remove the saline. About four hours after the operation the respirations rose suddenly to forty-eight a minute, and remained at about that level till he died four days after the operation. There was never any indication that the operation on the heart had interfered with its action, which, though quick (average 120 to 130), was wonderfully strong up to within a few hours of his death. No dropping of beats was noticed after the operation. The wounds in the heart had healed perfectly. The cause of death was judged to be multiple pulmonary infarction from clots derived from the right ventricle.

20. Drainage of Gunshot Wounds.—Page uses a tube made of rubber. In section it is star or pinion shaped. The outside diameter should be the same as that of full-sized ordinary drainage tube. For certain cases the drain should be provided with a central lumen. The tube is passed through the entire length of the wound track; the upper projecting extremity is capped by a piece of thin rubber tubing for example, a cut rubber glove finger—which extends just into the entry of the wound. As a result, a series of gutters lying against the wound surface extend the length of the track. When fluid is syringed into the cap, it passes down each

gutter, so as to bring the solution into contact with practically the whole wound surface, at the same time clearing away from the same area all débris. After lavage, the maximum capillary surface in proportion to the size of the drain is in action. When this type of tube is employed for blind wounds the provision of a central lumen allows the fluid to be syringed to the bottom of the track, whence it will return along the various gutters.

22. **Irrigation of Wounds with Therapeutic Solutions.**—Siphon drainage is the basis of the method advocated by Wright. The efficacy of bandage siphons depends on the volume of fluid delivered. This is determined (*a*) by the height to be climbed in the ascending limb; (*b*) by the length of, and weight of water in the descending limb; and (*c*) any obstacle to delivery encountered at the distal end of the descending limb. In addition to these the rate of delivery will be affected (*d*) by the nipping of the bandage when it rests on a knife edge, this factor coming seriously into account in experiments with a long length descending limb heavily weighted with water. Factors (*b*) and (*c*) have to be taken special note of in connection with the drainage of wounds. In cases in which other conditions are the same it is always the siphon with the longer descending limb which gives the more efficient drainage. Again, other conditions being the same, a larger volume of water is delivered from a bandage whose end is immersed in water than from a bandage suspended in the air. In case of water dripping off from a bandage into the air, consideration will show that the bandage will, just before the drop falls, be overfull of water, and that the inflow into it will for that moment be suspended, to be accelerated as soon as the drop has fallen off. As a result, we have in the bandage which is dripping off into air a cyclically interrupted flow. In contrast to this we have, in cases in which the descending limb of the bandage goes down into water, a continuous unobstructed delivery.

The practical application of this in connection with wounds is that the siphon bandages which carry off the washings from wounds ought to pass down from the patient's beds into water in vessels placed on the floor. And if any bandage happens to be too short to dip into the water the drip from it will be accelerated if it is torn into tails. In cases in which only little water is flowing off through bandages draining a wound, evaporation must be guarded against, for this will, by diminishing the load of water, retard the outflow into the descending limb. In cases in which an ampler outflow is desired, it can be obtained by packing the wound full of bandages. For details of the technic of this method of drainage the original article should be consulted.

Glasgow Medical Journal

October, LXXXIV, No. 4, pp. 241-319

23 *Cases Illustrating Some of Rarer Blood Diseases. J. S. McKendrick.
24 Hematuria, Symptom. D. Newman.

23. **Some of the Rarer Blood Diseases.**—Two cases of splenic anemia in which a splenectomy was done, followed by apparent cure, are cited by McKendrick. In the first case, that of a boy 15 years of age, there was a diminished fragility of the red blood corpuscles; urobilin was present in the urine, but there was no bilirubin in the blood serum; there was a normal number of white blood corpuscles instead of a leukopenia. The anemia was of the chlorotic type, the color index being 0.35. The patient suffered from perisplenitis and the results of anemia, but otherwise he had the appearance of health. There was no evidence of tuberculosis, and the Wassermann test was negative. There were no signs of rickets or worms. There had been considerable epistaxis and hemorrhages into the skin, but no pigmentation. There was no enlargement of the lymphatic glands. The liver was enlarged, but there was no ascites. On the day after the splenectomy the blood was examined, when there was an increase in the red and white cells, but no visible normoblasts. The white cells were chiefly polymorphonuclears. Eleven months after the operation the boy looked well and had no anemia from his appearance. The chief point of interest in the second case, that of a boy 8 years of age, was the immediate effect of splenectomy. On the day after operation the red cells had increased from 2,550,000 to 4,650,000; the white cells from 7,800 to 34,800; an occasional normoblast had given place to a rush of these, averaging 1,800 per cm. The increase in the white cells was due to a great preponderance of polymorphonuclears, the increase after the operation being 40 per cent. Another point in the case was that the bone-marrow was tapped before the operation and found to be hyperplastic. The patient made an uninterrupted recovery, and is still in the best of health.

Lyon Médical, Lyons

CXXIV, No. 6, pp. 181-216

25 Temporary Substitutes for Foreign-Made Proprietaries. (Comment le médecin peut-il provisoirement remplacer par des produits français les produits pharmaceutiques allemands les plus importants?) B. Lyonnet and R. Boulud.
26 Brief Inhalation of Ether Relieves Gallstone Colic. (Colique hépatique. Traitement systématique par les inhalations d'éther.) P. Aubert.
27 Favorable Influence of Jaundice on Tendency to Mild Pulmonary Edema. (Influence de l'ictère sur l'état cardio-pulmonaire.) P. Aubert.

No. 7, pp. 217-248

28 *Pulmonary Complications of Typhoid and Paratyphoid Fever. G. Mouriquand.
29 *Compression of Vagus Nerves in the Neck Restores Man After Knock-Out Blow on Solar Plexus. Molle.

No. 9, pp. 281-312

30 Impressions of a Surgeon at the Front. (Sept mois de chirurgie dans un hôpital du front.) A. Rendu. Commenced in No. 7.
31 *Treatment of Erysipelas with a Silver Nitrate Solution. H. Rondet.

28. **Pulmonary Complications in Typhoid.**—Mouriquand's experience with large numbers of typhoid and paratyphoid cases at Nancy suggests that much can be done to ward off bronchitis and pneumonia in such cases. The main thing is to prevent contagion from case to case. In one ward five typhoid patients in adjoining beds were doing well when one after another they developed pneumonia and three died. The epidemic of pulmonary complications died out at once as soon as each typhoid patient showing such symptoms was isolated. One patient developed a pure streptococcus purulent pleurisy and five days later the neighboring patient developed the same. Crowding a ward is particularly dangerous in case of contagious diseases of any kind. When the space between beds can be increased, the danger of pulmonary complications grows constantly less. The more serious cases should be separated as widely as possible, and if any septic complication develops strict isolation should be enforced and the bed and bedding disinfected with special care.

29. **Treatment of Knock-Out Blow.**—Molle has been making a special study of the therapeutic effects that can be realized by compression of the nerves and vessels in the neck. A recent thesis on the subject was published by one of his students this year. He here reports the surprising success of the measure in a young man who had received a blow in the epigastrium from the butt of a gun and dropped unconscious at once. Molle reached him in half an hour and found him still absolutely unconscious and racked by efforts to vomit, pulse 140, but there was no hematemesis and but little muscular defense. Molle pressed on the nerves and vessels at each side of the neck, applying the thumb pressure again and again, briefly, repeatedly and forcibly, hoping to act thus on the nerves rather than on the vessels in the neck. The latter are affected more by slow, progressive and prolonged pressure. Five or six seconds after he had begun this staccato pressure, just inside the inner margin of the sternocleidomastoid muscle, the young man opened his eyes, sat up and looking in surprise at the group around him asked what had happened. In an hour he felt quite himself but had some nausea and no appetite for the following three days.

31. **Silver Nitrate Solution in Treatment of Erysipelas.**—Rondet calls attention to his successful use for thirty years of a 1:40 solution of silver nitrate applied to the erysipelatous area every three hours, day and night, for seven days at least, never more than nine days. The skin is first cleansed with hot soapy water. The beneficial action is so pronounced in twelve or twenty-four hours that one is tempted to sus-

pend the treatment. But any cessation of the applications is followed by exacerbation of the erysipelas; to avoid surprises of this kind the treatment must be kept up systematically for the nine days. This is the regular duration of erysipelas, he remarks; even the recurrences run a nine-day course. The fluid should be swabbed all over the area and for two fingerbreadths beyond. He remarks in conclusion that, naturally, the benefit is most marked the earlier the treatment is begun.

Paris Médical

V, No. 6, pp. 109-124

32 The Work of the Field Hospital. (L'ambulance chirurgicale immobilisée près du front.) A. Latarjet.
33 Board Method of Immobilization for Compound Fracture of the Femur. L. Duvernay.

Nos. 7-8, pp. 125-164. Electrotherapy Number

34 What One Must Know About Electrotherapy to Apply It to the Wounded. (Ce que l'on ne doit pas ignorer en électrothérapie de guerre.) A. Weil.
35 Direct Electric Tests During Operations on Wounded Nerves. A. Léri.
36 Neuritis After Wounds and the Therapeutic Physical Measures. Delherm and Dausset.
37 Electrodiagnosis and Treatment of Wounded Nerves. J. Larat and P. Lehmann.
38 Improvised Electrotherapeutic Appliances. (Installation économique d'électrothérapie avec des moyens de fortune.) P. Bonvoisin and L. Palfray.
39 Localization and Extraction of Projectiles by Aid of Electricity. A. Weil.

Presse Médicale, Paris

October 7, XXIII, No. 47, pp. 385-392

40 *Treatment of Suppurating Gunshot and Shell Wounds of the Knee. (Traitement des arthrites suppurées du genou par plaies de guerre.) L. Bérard and Barjavel.
41 Induced Formication as a Sign of Lesions of Peripheral Nerves. (Le signe du fourmillement.) J. Tinel.
42 Simplified Technic for Circular Amputation. H. Chaput.
43 Simple Apparatus for Continuous Aspiration of Wounds, with or Without Continuous or Intermittent Irrigation. Saissi.

40. **Wounds of the Knee Joint.**—Bérard and Barjavel emphasize that a bullet or fragment of shell wounding the knee almost always causes more destruction than is apparent from the outside. Armed expectant treatment is justified even when the indispensable radiography shows a bullet still in the tissues. They saw four cases of this kind, the projectile still in the synovialis after two or three weeks, and perfectly tolerated. In five cases they succeeded in saving the functioning of the knee by Carrel's method of aspirating the secretions. In three others it failed and secondary amputation became necessary. They review the technic for arthrotomy and resection, emphasizing in conclusion the necessity for close and continued supervision of the case by the same surgeon from the earliest possible moment. He is thus able to guide the treatment according to indications as they arise day by day.

Berliner klinische Wochenschrift

October 4, LII, No. 40, pp. 1033-1056

44 *Substitutes for Glycerin. (Kriegsaphorismen eines Dermatologen. XIX. Glycerinersatz.) P. G. Unna. Concluded in No. 41.
45 *Treatment of Congenital Syphilis. E. Müller.
46 *Influence of Muscular Work on Sugar Content of the Blood. (Einfluss der Muskelarbeit auf den Blutzucker.) W. von Moraczewski.
47 *Technic That Shows Membrane-Like Formation in Human Tissues. (Darstellung membranartiger Bildungen im menschlichen Gewebe.) K. Hershcimer.
48 *Radiotherapy of Cancer of the Mouth. (15 Fälle von Mundhöhlenkrebs mit Radium günstig behandelt.) A. Sticker.
49 Unknown Factors in Transmission of Typhus. (Auftreten von Fleckfyphusepidemien in Truppen- und Gefangenenlagern.) F. Wolter.

October 11, No. 41, pp. 1057-1080

50 *Obscurities and Defects in Present Methods of Treating Syphilis; Suggestions for Improvement. C. Bruhns.
51 *"Aplastic Anemia" Developing from Benzol or Roentgen Exposures. (Aleukia haemorrhagica.) E. Frank.
52 Treatment of Whooping-Cough Should be Addressed to the Nervous System. (Ueber den Keuchhusten.) V. Lange.

44. **Substitutes for Glycerin.**—Unna remarks that the demand for glycerin during the war, for production of nitroglycerin, threatens to deplete the small stocks of glycerin still left in the pharmacies. Consequently it is well to be on the lookout for effectual substitutes. Aside from its value as a lubricant and its keeping properties, glycerin is prized mainly for its power to attract water. Merely as a lubricant, it is easy to find good substitutes for it among hydrocarbons of all kinds. There are also two cheap and abundant substances which can take its place as far as its water-attracting power is concerned. These two substances are syrup (from sugar) and calcium chlorid. Sugar, we know, attracts water; it increases the amount of saliva in the mouth, and this assuages thirst (sweetened water); keeps the dry mucosa in the upper air passages moist, and, in rectal enemas, induces defecation with an overdry rectum. Sugar has, besides, in contrast to glycerin, a reducing power which we utilize when we use syrup as a vehicle for readily oxidized drugs (such as ferrous iodid), or when we strew sugar on aphthous ulcerations or caro luxurians. Equally familiar, but less heeded, is the water-attracting power of calcium chlorid. Not only in solution but also in the form of a salve, it exerts this healing influence on callous and pruriginous eczema. By introducing a deposit of calcium chlorid into the skin, the layers below and above it soften up under the influence of the water attracted by the calcium chlorid. Rademacher has recommended a 4 per cent. solution of calcium chlorid for softening furuncles. Both the chlorid and the syrup have the further advantage that, as they liquefy, they bind considerable water and thus have a cooling action. For a field of furuncles, to take the place of the excellent combination of 60 parts kaolin, 30 parts glycerin and 10 parts ichthyol, Unna recommends as a substitute formula a mixture of 40 parts kaolin, 30 parts syrup, 10 parts ichthyol and 20 parts aqueous solution of calcium chlorid (1:2).

45. **Treatment of Congenital Syphilis.**—Müller advocates intensive courses of treatment in a special department in general hospitals rather than separate institutions for syphilitic children. He has been applying treatment more energetically of late under the influence of the new régime in regard to syphilis in adults. For infants he prefers intramuscular injection of a suspension of calomel in olive oil, and gives no mercury by the mouth or inhalation, but alternates with neosalvarsan. For children over 2, he gives inunctions alternating with neosalvarsan injections. Some of the infants treated as above died suddenly, as in collapse. Probably the system was overwhelmed too suddenly with the toxins liberated by the destruction of such quantities of spirochetes. Since these experiences he has reduced the dosage somewhat for infants. Once past this first course of treatment, however, the children thrive well under the succeeding courses.

He has been impressed with the improvement in intelligence of many of the children during the courses of treatment. Among the cases related is that of a bright child with adenoid vegetations. As they were excised their extraordinary hardness was noted, and the diagnosis wavered between syphilis and sarcoma. The child seemed healthy and bright, and there was nothing to suggest syphilis, but the Wassermann test gave a pronounced reaction. The aim should be with congenital syphilis to eradicate it entirely. Hence efforts are justified to make the first course of treatment thorough and decisive. The Wassermann reaction is his guide. This test is applied before each course of treatment and again eight or ten days after its close. After the Wassermann has become negative, two courses are given in prophylaxis. If the reaction is positive, treatment is continued until the desired aim is reached. In the most favorable case, therefore, three courses are required and otherwise four or five.

46. **Influence of Muscular Work on the Sugar Content of the Blood.**—Moraczewski noticed that in persons inclined to glucosuria, the sugar content of the blood displayed a tendency to increase under conditions in which there was no increase in the healthy. This occurred even on a fat diet. This fact enables detection of a latent tendency to glycemia; after a given exercise the sugar content in the blood rises when it remains stationary in the healthy. The findings in some healthy and diabetic persons are tabulated for comparison. After ingestion, fasting, of 200 gm. sugar, the

healthy assimilated it completely while the diabetic showed an increased proportion of sugar in the blood. This alimentary glycemia is due to defective utilization of the sugar, that is, to defective synthesis of glycogen, while exercise glycemia is due to absorption of sugar from its deposits, whether in muscle or elsewhere. The diabetic mobilizes his sugar reserves more promptly and completely than the healthy. Normally, in repose, the sugar content of the blood declines and it rises during and after exercise. Exercise also increases the output of uric acid in the urine; it parallels the blood sugar content, increasing under exercise and declining during repose regardless of the amount of urine voided. Even when sweating freely, the output of urine much reduced, the uric acid in the urine corresponded to the sugar content of the blood, both increasing during exercise, and declining in repose, in the healthy.

After vigorous exercise, ingestion of 200 gm. of sugar, to test the tolerance, induces no increase in the sugar content of the urine and very little if any in the blood. During repose, on the other hand, it is much easier to induce glycemia and glucosuria. Hence "exercise glycemia" cannot be compared with alimentary glycemia, as the latter leads to glucosuria while the former augments the tolerance and counteracts glucosuria. Diabetics excrete less sugar in the urine during fever and eliminate more during repose than when exercising. Exercise glycemia is thus associated with absorption of sugar and increased power of oxidation. The above facts may have to be considered in treatment of diabetes, if confirmed by others.

47. **Membrane-Like Contours to Human Tissues.**—Herxheimer has found that staining organs with azure-eosin and decoloring with a tanning technic shows up a specific membrane-like contour of the connective-tissue fibers, etc. This technic shows up further delicate fibers on the sebaceous and sweat glands, intima of the blood vessels, etc.

48. **Cancer of the Mouth and Radium Treatment.**—Sticker reports fifteen cases in most of which malignant disease of the mouth retrogressed under radium treatment without scars or mutilation. The list includes some cases of recurrence after operations. He declares further that radiotherapy is preferable to surgical treatment in many cases for technical reasons and also from the standpoint of immunity. This statement is based on experimental research which demonstrated that it is possible to induce an implantation tumor on laboratory animals in various different organs and points, inoculated all at the same time, but that, after having been once successfully inoculated, it is impossible to induce further growths by later implantation of tumor cells at any point. After complete excision of the implantation tumor, however, a new implant "takes" at any and every point inoculated all at the same time. On the other hand, if the implantation tumor was only partly excised and it continued to grow, subsequent implantations gave constantly negative results. These experimental data correspond to what is observed in the clinic during the period preceding metastasis. The cancer long remains solitary, and, especially with cancer in mucous membranes, notwithstanding the constant opportunities for implantation of tumor cells farther along, the mucosa beyond is generally free from metastases, even with extensive ulceration. After vaginal hysterectomy for cancer of the uterus, he continues, recurrence in the vagina is not uncommon, while metastases in the vagina, with the uterine cancer still present, are extremely rare.

These and similar data cited are alleged to explain why radiotherapy is more promising in certain cases than surgical removal of the focus. Under the radiotherapy, the cancer cells being gradually destroyed and passing into the circulation, cause a lively production of antibodies, and these protecting substances combat the growth of any new cancer cells. The antibodies thus generated are similar in nature to the autolysates of cancer cells which some are using now in treatment of cancer. None of the experiences in this line reported to date, however, make the distinction which he emphasizes between the periods before and during metastasis. The nonheeding of this fundamental distinction readily explains the unsatisfactory results to date. It is by no means immaterial whether the tumor autolysates are taken from the body while it is still engaged in producing antibodies, that is, during the premetastasis stage, or whether the material is not taken until after the body has lost its capacity for antibody production.

He describes his fifteen cases in detail; in three the cancer was on the tongue and the radium induced a clinical cure. In one case, only seven twelve-hour exposures, all at night, accomplished the purpose, the cancerous crater healing completely in a few weeks. In seven cases the cancer was in the lower jaw and in five others in the upper jaw. The radium was fastened in a plate made to fit over the upper or lower teeth. One patient wore this for thirty nights' exposures, and it did not interfere with his sleep. In two other cases the cancer was a recurrence after one or several operations. By modifying the tooth-plate-holder it was possible to apply the rays in various directions thus facilitating the cure.

50. **Defects in Present Methods of Treating Syphilis.**—Bruhns insists that actual progress in the treatment of syphilis will have to be based on prolonged supervision of cases carried on and recorded systematically. This is scarcely possible except with private patients, and with repeated collective inquiries. He presents evidence to sustain his contention that medical supervision is required for many more years than is now considered necessary. An isolated negative Wassermann is no criterion that the disease is extinct. Only when the clinical and serologic findings are constantly negative, on repeated examinations, for many years, can we regard the cure as probable. He lists the outcome of the Wassermann test repeated about yearly from 1908 to date in 100 private patients infected with syphilis ten or more years ago. In forty-two the test was constantly negative; in 32, positive at first but negative later; in seven, constantly positive, notwithstanding repeated courses of treatment; in three, positive at first, then long negative, but finally veering to positive again; in eight, negative at first, then positive and finally negative, and in eight, negative at first but finally positive. The last three groups are particularly suggestive; in some the long negative reaction for five or six years suddenly veered to a pronounced positive reaction without any clinical manifestations becoming evident at the time or later. After renewed courses of treatment in the two following years the response became negative again. Among the cases with constantly negative reaction were some in which brain trouble or tabes developed, demonstrating anew that the clinical manifestations and the serologic findings do not always run parallel.

We appreciate better now the dire consequences of syphilis; insurance statistics have shown that 15 or 25 per cent. die from the results and that from 6 to 10 per cent. develop disease of the central nervous system while even more suffer from arterial disease. Lenz estimates that 25 per cent. of all syphilitics have aortitis. Paralysis develops on the average ten or fifteen years after infection and manifest aorta trouble, eighteen or twenty years. By treatment in time, gummatous lesions retrogress, and hence specific treatment repeated often enough may ward off arterial and cerebral trouble later. Syphilitics should have impressed on them the necessity for keeping under medical supervision. Some central system might be devised to remind all syphilitics at regular intervals of the necessity for returning to be examined.

Some recent research has demonstrated that in from 60 to 75 per cent. of all the cases of tabes or paresis other members of the family had been infected. This proportion is far larger than is found in the families of syphilitics who do not develop tabes or paresis. These and other facts seem to indicate that the form of syphilis which develops tabes and paresis later is infectious over a longer period than is the case with syphilis under other conditions. Raven reported last year investigation of ninety families in which a case of metalues had developed. The interval between date of infection and the marriage was known in about half of them and it had been four years in two families, five years in one, and from six to twenty-one years in ten. It seems

as if in syphilogenous nervous affections the individuals are liable to infect others over a longer period than other syphilitics. If further research confirms this, we will have to modify our views as to when we can consent to marriage, for we have no means of knowing which of our syphilitic patients are going to develop nervous or brain affections. Only by prolonged supervision over individual cases and correlation of uniformly classified data can we hope for light on the various phases of the syphilis question.

51. **Hemorrhagic Aleukia.**—The first installment of Frank's article on the so-called "aplastic anemia" was summarized in these columns October 30, p. 1590. He refers to Selling's "model report" of a case of fatal industrial poisoning from inhaling the fumes of benzol. In this and in two similar cases, the red blood cells were comparatively little affected; the white cells bore the brunt of the attack. The result is a leuko-anemia, not an erythro-anemia, and myelophthisis is the source of the trouble. Frank reports a case of myeloid leukemia in a woman of 39 given a brief and mild course of Roentgen treatment under which the blood count returned practically to normal. The changes thus started in the blood kept on, however, until the count reached the absolute opposite of what it had been, the leukemia being superseded by aleukia. Decastello has recently reported a similar case. In both, the complete transformation occurred under Roentgen exposures of the spleen. This suggests that the spleen may have a special function in some circumstances, manifested by an inhibiting and impairing of the functioning of the bone marrow. This special function seems to be set in action by the influence of Roentgen exposures, and also by the influence of certain morbid processes in the spleen itself. Frank declares that this syndrome of morbid conditions in the spleen accompanied by subnormal numbers of leukocytes and blood platelets, brings us to the cause of toxin production in hemorrhagic aleukia. Too long it has been mistakenly included in the group of "aplastic anemias."

Deutsche medizinische Wochenschrift, Berlin

October 7, XLI, No. 41, pp. 1205-1236

53 *Medicomechanical Treatment. G. Ledderhose.
54 The Vitamins in the Diet. (Ueber Vitamine und akzessorische Nährstoffe.) H. Boruttau.
55 *Concordance Between Urochromogen and Diazo Tests in Typhoid and Typhus. M. Levy.
56 Selenium Compounds in Treatment of Cancers. (Zur Therapie maligner Tumoren der Tiere und des Menschen mit Selenverbindungen.) H. Coenen and W. Schulemann.
57 The Lime Content of Bile and Its Import in Production of Gallstones. (Der Kalkgehalt der Galle.) L. Lichtwitz and F. Bock.
58 Nystagmus After Injury of Foot of Second Frontal Convolution; Nine Cases. Noehte.
59 Gunshot and Shell Wounds of the Jaws and Their Treatment. (Die Kieferverletzungen im Kriege.) A. Stein.
60 Technic for Making Plaster Casts in Field Hospital. S. Peltesohn.

53. **Medicomechanical Treatment.**—Ledderhose discusses the indications and technic for application of medicalmechanical treatment, especially for men recovering from gunshot and shell wounds. He emphasizes, however, that improvised apparatus generally answer as well as more complicated and expensive contrivances. With them all, careful supervision is necessary to prevent harm from misdirected or excessive exercises. The main features in the whole system of medicomechanical treatment are the physician's influence on the patient's mind and spirits, and the benefit from the skilful application of water, steam and superheated air, massage and electricity.

55. **The Urochromogen Reaction in Diagnosis of Typhoid.**—Levy applied the diazo and Weiss' and Rhein's potassium permanganate test for urochromogen in the urine in 122 cases of typhoid and the Weiss and diazo tests in twenty-four of typhus. The findings were so concordant with the various tests that it is evident the simple urochromogen test can take the place of the diazo when desired. The discrepancies were found so slight and so few that they are practically negligible. The urochromogen test was especially pronounced in all the cases of typhus giving a diazo reaction; both tests were negative in three of the twenty-four cases.

(The Weiss technic was described in THE JOURNAL, June 13, 1914, p. 1886.)

Medizinische Klinik, Berlin

October 3, XI, No. 40, pp. 1093-1118

61 *Clinical Manifestations, Genesis and Etiology of Purulent Meningitis During War Time. A. Ghon and B. Roman.
62 Present Status of Psoriasis and Allied Affections. J. Jadassohn. Commenced in No. 39.
63 *Gas Gangrene and Gaseous Phlegmons. W. Pfanner.
64 *Arrest of Hemorrhage with Muscle Tissue. (Blutstillung durch thrombokinetische Muskelwirkung.) R. Pamperl.
65 Experiences in a Field Hospital. (Erfahrungen allgemeiner Art aus einem Felldazarett des westlichen Kriegsschauplatzes.) W. Wolf.
66 Suture of the Heart Six Hours After a 3-cm. Stab Wound; Too Late for Heart to Rally. J. Frist.

61. **Purulent Meningitis.**—Ghon and Roman state that purulent meningitis with an exanthem, true Weichselbaum meningitis, has been observed at numerous points in Germany, Austria and Hungary since the war began, while before it was rare. They examined five such cases postmortem, two in adults. The meningitis that develops after a gunshot or shell wound of the head always proved a mixed infection in the sixteen cases they had occasion to examine postmortem. In two cases the proteus and the gas gangrene bacillus were involved.

63. **Gas Gangrene and Gas Phlegmon.**—Pfanner insists that true gas gangrene requires the most vigorous treatment, early amputation, or the patient is doomed. On the other hand, phlegmons with gas production are usually mild processes that heal under simple conservative measures. This distinction has not been made clearly by writers on the subject, and those who have reported "recovery from gas gangrene under conservative measures," merely mistook a phlegmon with gas for the true gas gangrene. Differentiation is often difficult, but one sign he has never known to fail. This is a suddenly developing intense pain in the limb below the wound, at a time when there is little or no production of gas and no signs to warn of the impending catastrophe. The pain is so intense that the patient clamors for the doctor. Testing the sensibility during this attack of pain shows paresthesias. The pain keeps up agonizing for an hour or two, and then stops abruptly. The limb in this area is then found completely anesthetic, pale, cold and dead. While these changes are occurring below, the discoloration of the skin and the emphysema spread and involve extensive regions.

Pfanner had studied these phenomena in three cases of true gas gangrene before the war and saved the patients by prompt amputation. Armed with this experience, he was able to differentiate true gas gangrene in the early stages in wounded soldiers and bring them through by immediate amputation. On the other hand, he was able to save the limbs of others who had phlegmons with gas, simulating true gas gangrene, but terminating favorably under conservative measures.

64. **Arrest of Hemorrhage with a Scrap of Muscle.**—Pamperl relates remarkable success in promptly arresting hemorrhage by pressing on the bleeding spot a piece of muscle tissue, taken from the vicinity, crushed a little first, in a clamp, to make it stick better and bring the blood platelets more to the surface. The scrap need be only from 1 to 3 mm. thick; it sticks of itself after it has been pressed on the bleeding spot for a few seconds to two minutes. He avoids having any fascia tissue on the side turned to the bleeding spot. The history of means to arrest hemorrhage is reviewed and this muscle method is ascribed to Horsley who found it effectual on animals, hemorrhage from arteries and veins being arrested by the application of the scrap of muscle when the blood pressure did not exceed 60 or 80 mm. mercury. Horsley is said never to have published his experiences. Pamperl found it always effectual in his sixteen cases, including a number of operations on the brain.

Münchener medizinische Wochenschrift, Munich

October 5, LXII, No. 40, pp. 1345-1380

67 Number and Shape of Leukocytes in Typhus. (Zahl und Formen der weissen Blutkörper beim Fleckfieber.) M. Matthes.
68 Relapsing Diseases and Their Treatment with Salvarsan. (Rekurrenserkrankungen und ihre Behandlung mit Salvarsan.) F. Reiche.

69 Modified Technic for Electrocardiography. (Modifikation in der Aufnahme der Elektrokardiogramme von pathologischen Herzen zur Erleichterung der klinischen Diagnose.) Jaworski.
70 *Boeck's Sarcoid with Participation of Internal Organs. E. Kuznitzky and A. Bittorf.
71 *Steam Sterilization Practicable for Large Rooms. (Dampdesinfektion grosser Räume.) G. Seiffert.
72 *Artificial Pneumothorax Under Adverse Conditions. J. Gwerder.
73 Technic for Determination of Protective Ferments in Tuberculous Spinal Fluid. (Untersuchung tuberkulös-meningitischer Punktionsflüssigkeiten mit Hilfe der Ninhydrinreaktion.) V. Kafka.
74 Case for Office Wassermann Test. (Neues Besteck zur Ausführung der Wassermannreaktion im Sprechzimmer des Arztes.) R. Weiss.
75 Warning Against Training Blinded Soldiers to be Masseurs. (Die Blindenmassage.) F. Kirchberg.
76 Accidental Heart Murmurs in Soldiers. (Zur Kenntnis der akzidentellen Herzgeräusche bei Kriegsteilnehmern.) H. Ehret.
77 Differential Diagnosis of Relapsing Fever. (Rückfallfieber.) R. Cayet.
78 Afebrile Typhoid. (Fieberloser Typhus.) F. Meyer.
79 Immobilization of Fractured Femur Leaving the Knee Movable. (Oberschenkelschussfrakturen.) H. v. Baeyer.
80 Treatment of Severe Fractures and of Joint Injuries in Field Hospital. A. Heddaeus.
81 Diagnosis and Treatment of Wounds of Skull and Brain. (Schädel- und Gehirnschüsse. Unterscheidung der Tangentialschüsse.) P. Sick.
82 Arc Light Exposures and Galvanic Foot Baths Promptly Relieve Pain in Feet after Freezing. (Schnelle Heilung schwerer Hyperästhesie an erfrorenen Füssen.) K. Hasebroek.
83 Efficacy of Charcoal in Treatment of Gastro-Intestinal Catarrhal Troubles. (Ueber Tierkohlebehandlung bei Truppen in der Front.) G. Kelemen.

70. Boeck's Sarcoid.—This affection has hitherto been classed with the skin diseases, but a case is here reported in a man of 27 in which the lungs, spleen, liver, lymph glands and kidneys were also involved. Kuznitzky knows of only one case on record (Terebinsky) of Boeck's sarcoid with enlargement of the spleen. The nodules on the upper arm were small and exclusively in the subcutis, rolling under the finger, and no connection with the tissues above could be detected even with the microscope. The nodules were scattered over the limbs and the face was spared, contrary to the usual mode of distribution. Kuznitzky thinks that there is much to sustain the assumption that the disease is a general one at first, and that the skin is affected secondarily, the skin lesions developing symmetrically, without much difference in size. Seven other cases of Boeck's sarcoid were then examined more closely for internal manifestations, and the same lesions were evident in the lungs in all, roentgenoscopy revealing the peculiar marbling effect, while the spleen was enlarged in four, and three presented the same characteristic catarrhal aspect in the mucosa of the nose, epiglottis, pharynx and larynx. He emphasizes that none of them reacted positively to tuberculin tests, even carried to the extreme limit. The Roentgen pictures of the case described in detail show the pathologic infiltrations in the lungs, amply explaining the symptoms, and show the improvement parallel to the improvement noted in the nodules of the skin.

The young man had been supposedly healthy except for measles in childhood and gonorrhea at 21. Symptoms of difficulty in breathing and in the heart action after exertion developed about eighteen months ago, and nephritis was diagnosed after a few months. Then came gastric catarrh, vomiting, diarrhea, and extreme weakness. Red spots appeared on the legs with the earliest symptoms and have persisted unmodified to date. The leukocytes numbered 5,600; hemoglobin, 87 per cent. After a two months' course of arsenic the hemoglobin percentage was 92, the red count 5,100,000, but the whites were still only 5,100. The arsenic was not borne well and a febrile herpes zoster developed with severe neuralgia, but the general condition improved and the man gained nearly seven pounds in weight. He had lost 34 pounds during the preceding year.

71. Steam Sterilization of Large Rooms.—Seiffert experimented with double-walled wooden barracks, turning the steam from two traction engines (*Lokomobilen*) into a room of 1,000 cubic meters' air space. The sterilization was satisfactory in four hours. It became complete when formaldehyd was used with it, all pathogenic germs and vermin being promptly destroyed.

72. Artificial Pneumothorax Under Adverse Conditions.—The adhesions, etc., apparently rendered pneumothorax impracticable in the case described, but as a last resort Gwerder injected the nitrogen in the desperate hope that it might help somehow. To his surprise it remained localized directly over the cavity and compressed it in the most ideal manner, thus inducing the collapse of the lung exactly where it was needed and nowhere else, and the patient began to improve at once.

Therapie der Gegenwart, Berlin

October, LVI, No. 10, pp. 361-400

84 Chronic Septic Conditions in Tonsils, Teeth, Jaws and Nasal Sinuses, from Standpoint of Military Efficiency and Pensions. (Die chronischen Infektionen im Bereiche der Mundhöhle und der Krieg.) H. Pässler. Concluded in No. 11.
85 *Advantages of Isotonic Sugar Infusions in Cholera and other Acute Diseases Impairing the Kidneys. H. Strauss.
86 *Systematic Exercises in Treatment of Tabes. (Alte und neue Uebungsbehandlung der Tabes.) L. Jacobsohn.
87 Subjective Factors Regulating What and How Much We Eat. (Das Nahrungsbedürfnis.) W. Sternberg.

85. Sugar Instead of Saline Infusions.—Strauss warns that salt is directly injurious to the abnormally sensitive epithelium in the kidney. He has long preached that when there is reason to suspect that the kidneys are below par, when infusion is indicated, an isotonic sugar solution should be used instead of the ordinary saline. He now urges this as the routine procedure in cholera, as in this disease the epithelium apparatus of the kidneys is almost invariably seriously impaired. The lesions in cholera resemble those with mercuric chlorid poisoning. Rumpf has stated that in his 3,000 cases of cholera anuria was the rule in all but 698, and that 57.3 per cent. of the cases with complete anuria terminated fatally. Saline infusion tends to aggravate the kidney lesions while a 4.5 per cent. solution of grape sugar answers the therapeutic purpose without damaging the kidneys and at the same time supplies in the most harmless way a certain amount of nourishment; 2 liters of the 4.5 per cent. solution represent 360 calories. It is possible that infusion of sugar solution will prove to have superior advantages over salt solution in other severe infections and intoxications with damaged kidneys.

86. Exercise Treatment of Tabes.—Jacobsohn emphasizes that no specialist skill is required to train tabetics to overcome their ataxia. Any physician can do it, and the mechanical aids can be improvised or dispensed with entirely in the mild cases. As the tabetic does not feel fatigue readily, he must be watched to stop short of fatigue as this would weaken the muscles. The exercises benefit even in the severest cases, as a rule, and decided improvement can be counted on in 50 per cent. of all cases. The exercises can be done in bed or on the sofa at first. Five to fifteen minutes is usually long enough for the sitting, but it should be repeated two or three times a day. It may be necessary to support the limb at first or suspend it in a sling to permit the patient to make the volitional movements. A straight, zigzag or spiral chalk mark on the floor to follow, or a book or cigar box to step over may prove useful exercises. The aim should be to train the patient in the movements needed in daily life, walking, climbing stairs, knocking, writing and buttoning garments. A typical feature of the third stage of tabes is the inability to extend the leg at the knee. The knees thus give way when the tabetic tries to stand up. The patient strives to compensate this by innervation of the extensors of the knee, and this generally results in an overcorrection. The knee is extended too far and held in this overtension. The same occurs with the hip joint, shoulder and elbow. The tendency is to overcorrection.

By thus analyzing the elements of the movements, we can see the way in which they share in the general disturbance, and the patient can thus be shown and taught how to correct it by voluntary innervation and utilization of the remnants of sensibility. The volitional muscular correction is very apt to be excessive, and this in turn requires compensation. Foerster has made a special study of this analytic method, and Jacobsohn endorses this method as great progress. He

emphasizes, however, that the psychic element in the ataxia must not be overlooked. Some patients have been frightened by what they hear and read about tabes; others have had a fall or other accident. Cautious suggestion renders good service in such cases.

Wiener klinische Wochenschrift, Vienna

XXVIII, No. 33, pp. 881-908

88 Experiences in a Field Hospital. M. Hirsch and T. Meisel.
89 Typhus in Prisoners' Camp at Marchtrenk. A. Skutetzky.
90 Single Bent Wire as Splint in Dressings. (Drahtschienenverbände.) G. Engelmann.
91 Serodiagnosis of Glanders in Man. (Zur Malleindiagnostik des menschlichen Rotzes.) F. Berka.
92 Emotional Heart Disturbances in Soldiers. H. Fried.

No. 34, pp. 909-936

93 Disturbances in Micturition from Chilling. (Störung der Harnentleerung infolge Erkaltung.) G. Stiefler and R. Volk.
94 Functionally Capable Artificial Arms. (Neue Prothesen.) G. Engelmann.
95 Measures to Get Rid of Lice. E. Eckert.
96 Measures to Get Rid of Lice. N. Swoboda.
97 *Sodium Sulphate in Dysentery and Cholera. (Behandlung der Dysenterie und Cholera mit Natrium sulfuricum.) B. Ghigoff.

No. 35, pp. 937-964

98 Possible Connection between Goiter, Cretinism and Chagas' Disease. R. Kraus and Others (Buenos Aires).
99 Talipes Equinus after Wound of the Leg. (Spitzfuss nach Schussverletzung im Bereiche des Unterschenkels.) O. v. Frisch.
100 Enuresis in Soldiers on Active Service. ("Blasenschwäche" bei Soldaten.) B. Lipschütz.
101 Aluminum Plate to Protect Painful Cicatrix in Hand or Foot. (Zirkumskripte Narbenschmerzen bei Durchschüssen von Hand und Fuss.) A. Deutsch.
102 Care of Tuberculous Soldiers. C. Feistmantel and J. Kestzler.
103 Six Months in a Field Hospital. W. Pick. Commenced in No. 34.

97. Sodium Sulphate in Treatment of Dysentery and Cholera.—Ghigoff has treated by this means 286 patients with dysentery or cholera, including 128 quite severe cases. Only thirty-eight died, and he regards this as evidence that many were saved by this remedy. The sodium sulphate is given in a 20 per cent. aqueous solution, with a little opium. A tablespoonful of this is taken every two hours. Sometimes he gives a calomel purge first and then the sodium sulphate. With incessant vomiting, the sulphate is given in a dose of 30 c.c. dissolved in a glass of tepid water, taken all at once.

Zentralblatt für Chirurgie, Leipzig

October 9, XLII, No. 41, pp. 737-752

104 *Bloodless Radical Operation for Hemorrhoids. (Eine unblutige Radikaloperation der Hämorrhoiden durch einfache Naht.) G. Tillmann.

October 16, No. 42, pp. 753-768

105 *Embolus in Abdominal Aorta Removed by Operation. G. E. Konjetzny.

104. Bloodless Operation for Hemorrhoids.—No assistant is required and the operation is done under local anesthesia. Tillmann seizes the well everted nodule with a long clamp and takes a mattress suture back and forth in the tissues just below the clamp. Then the nodule is cut off close to the clamp and the raw edges are sutured together. The ends of the threads must be left long till the suturing is all done. The patient need not be kept in bed for more than eight or ten days as a rule. He has done this operation on forty soldiers and the men were ready for duty again in two weeks. In twenty-six cases the nodules were multiple.

105. Aortotomy for Embolism.—The operation was successfully performed. The embolus was 5 cm. long, lodged at the bifurcation of the abdominal aorta. At once afterward pulsation could be felt in both femoral arteries. The operation had been done as a last resort, the patient not being seen until thirty-six hours after the symptoms of obstruction of the aorta had developed. Necropsy revealed severe and chronic myocarditis, although the man had supposed he was in robust health.

Zentralblatt für Gynäkologie, Leipzig

October 9, XXXIX, No. 41, pp. 713-730

106 Retro-Uterine Fixation of Round Ligaments to Correct Retrodisplacement. (Retrouterine Doppelung und Befestigung der runden Mutterbänder zur Heilung der Rückwärtslagerung und Senkung.) M. Grechen.

October 16, No. 42, pp. 731-746

107 *Fourteen Years of Extended Vaginal Hysterectomy for Cancer. (Zur erweiterten vaginalen Karzinomoperation.) H. Thaler.
108 Suggestion for Uniform Cancer Statistics. (Zur Technik der zukünftigen Karzinomstatistik.) H. Thaler.

107. Schauta's Extensive Vaginal Operation for Uterine Cancer.—Thaler here brings the record down to date, the total number of cases of uterine cancer at Schauta's clinic, between 1901 and 1914 inclusive being 1,305. In 654 an operation was done by Schauta's "extended" technic and 133 of the women have been cured with no signs of recurrence for five years at least. This is a total proportion of 38 per cent. permanent cures. Computed according to Winter's scheme, this is an absolute cure of 17.4 per cent. of all the cases seen, and, restricting the figures to 1905-1909, we have 20 per cent. absolute cures.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 13, XXXVI, No. 70, pp. 1089-1104

109 *Stained Gauze Strips for Testing Gastric Acidity. (Circa un nuovo metodo di saggio dell' acidita gastrica senza l'uso della sonda.) F. A. Galmozzi.
110 *Hemiplegia from Spontaneous Hematomyelia. (Ematomielia spontanea in amenorroica.) G. Jona.

October 16, No. 71, pp. 1105-1120

111 Vaccine Treatment of Pyelitis. (La terapia delle pieliti.) A. Fantoni.

109. Simple and Practical Test for Gastric Acidity Without the Stomach Tube.—Galmozzi has been testing the method recently introduced by Quadrone and Dematteis and has found it practicable and reliable, although it is an index merely of the acidity in the stomach. A strip of gauze about 4 or 5 cm. long by 1 cm. wide is dipped in a 0.5 per cent. solution of congo red, and another similar strip in a 0.5 per cent. solution of dimethylamidoazobenzol. A long thread is fastened to the two strips and both of the strips are squeezed into a capsule which the patient swallows after a test meal. When the capsule has dissolved, the strips of gauze are drawn out and the tint of the gauze strips indicates conditions as to the acid in the stomach content.

110. Spontaneous Hematomyelia in Amenorrhea.—Jona's patient was a young woman previously healthy except for menstrual anomalies. There was no menstruation until the age of 19, and after 20 menstruation ceased for a year, then returned twice. He assumes that a vicarious hemorrhage in the spine was the cause of the hemiplegia. It came on twenty days after the last menstruation and afterward there was complete amenorrhea for another year. There was sudden, intense pain in the spine, followed immediately by the hemiplegia. The paralysis in the arm was of the flaccid type, with atrophy, while the leg showed spastic paralysis, with no tendency to atrophy.

Hygiea, Stockholm

LXXVII, No. 8, pp. 1025-1104

112 *Syphilitic Abscess of the Lung; Improvement under Artificial Pneumothorax and Mercurial Treatment. H. Lindvall.

112. Pulmonary Syphilis.—Lindvall had opportunity in 1913 to watch the clinical course and examine postmortem two cases of syphilitic processes in the lungs. He recently encountered a third case, and was able to arrest the progress of the affection with specific treatment. The patient was a woman of 33, previously healthy, with no known venereal disease. Early in 1913 she developed sciatica and began to feel weak and in two months to cough incessantly. There was but little expectoration and the sputum never was hemorrhagic. The symptoms indicating a lesion in the lung developed very gradually and nothing could be found to explain it except possibly syphilis. It seemed to be restricted to the central part of the right lung; there was evidently destruction of lung tissue with formation of a cavity, but no tubercle bacilli could be detected in the sputum and inoculation of guinea-pigs was also negative. The most convincing proof of the syphilitic nature of the process was the brilliant success of specific treatment aided by artificial pneumothorax.